CALS TEST NETWORK

The CALS Test Network MIL-D-28000 Class II Reference Drawing Packet Revision C

January 27, 1989

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Prepared for
Air Force Logistics Command
AITI Project

Lawrence Livermore National Laboratory

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Preface

This CALS Test Network MIL-D-28000 Class II Reference Drawing Packet is a document which will have periodic updates. This will occur as the reference drawings and their associated procedures, scripts, and files are corrected for oversights and/or are updated to new versions of the standards.

I acknowledge the following people for their technical assistance: members of the IGES/PDES Organization, in particular of the IGES Test Case Development Committee; those in the LLNL Plant Engineering Central CADD Facility, in particular Kenneth Sivori; and all the CTN team members.

Please use the information contained in this packet at your own risk. Send recommendations for change or comments about the content to:

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Abstract

This CALS Test Network MIL-D-28000 Class II Reference Drawing Packet contains the information needed to conduct tests of the engineering drawing subset, Class II, of the military specification MIL-D-28000 using IGES processors. The material is intended to demonstrate industry's and government's use of MIL-D-28000 in accordance with the CALS initiative. The CALS Test Network (CTN) is the organization tasked with demonstrating this digital data interchange among industry and government and will use this packet during CTN structured testing. The results derived from this testing will allow the CTN to suggest modifications to drafting techniques, CAD vendors' IGES processors, the IGES specification, and most importantly, the MIL-D-28000 military specification.

The CALS Test Network MIL-D-28000 Class II
Reference Drawing Packet

1.0 Introduction

The CALS Test Network (CTN) is a distributed Department of
Defense (DOD) and industry consortium within the Computer-
Aided Acquisition and Logistic Support (CALS) Program tasked
with demonstrating and testing the interchange of digital
technical information using the CALS standards in user
applications.

The N-entity and the L-bracket reference drawings described
herein will be used by the CALS Test Network (CTN) during
structured end-to-end transfer testing of IGES data. IGES
is the Initial Graphics Exchange Specification used for
interchanging computer aided design (CAD) data between
dissimilar CAD systems. Specifically, these reference
drawings will demonstrate the use of the IGES entities
identified in the engineering drawing subset, Class II, of
the military specification, MIL-D-28000. In addition to
demonstrating the use of this military specification and
subset, these drawings will also allow the CTN to
demonstrate the use of MIL-D-28000's parent document, MIL-
STD-1840A. MIL-STD-1840A is a CALS standard which
standardizes the delivery "envelope" used by organizations
exchanging digital forms of technical information.

It is important to note that many CAD systems presently
support only part of the military specification/subset, MIL-
D-28000 Class II, because of the large number of entities
the subset identifies. This means that any system executing
this reference material will not likely achieve 100 percent
perfect results. There is no reason to be alarmed. The
goal is to determine which entities are presently processed
and to work toward the best transfers possible.

2.0 Content of the Reference Drawing Packet

The CTN MIL-D-28000 Class II Reference Drawing Packet you
are currently reading contains a set of reference material.
This packet contains the pieces of information needed to
execute a test using a CAD vendor's IGES processors. It
contains:

> 1. Procedures to follow to conduct a pre-processor
>   test; pre-processing is the translation from a CAD
>   system to an IGES file.

2. Generation scripts (sets of instructions) to follow to create the N-entity and L-bracket drawings on any CAD system.
3. Plots to show what the N-entity and L-bracket drawings should look like upon completing the generation scripts.
4. Procedures to follow to conduct a post-processor test; post-processing is the translation from an IGES file to a CAD system.
5. The IGES files on a 9-track tape in MIL-STD-1840A format of both the N-entity and L-bracket reference drawings to post-process into the CAD system.
6. Evaluation scripts (sets of questions) to complete after the N-entity and L-bracket drawings have appeared on the CAD screen after post-processing.
7. A paper printout of the IGES files for both the N-entity and L-bracket drawings with every entity identified by number, form, and, description; these may be useful in pinpointing processing errors.
8. Entity listing and counts for both the N-entity and L-bracket drawings.
9. Hardware and software descriptions of the CTN IGES Test Platform.

The above-mentioned pieces of information are contained in the attachments labeled A through M which follow this general introduction.

3.0 Content and Creation of the Reference Material

3.1 The N-entity Drawing

The N-entity drawing is comprised of all the geometric and annotation IGES entities (entity numbers 100 through 230) identified in the MIL-D-28000 Class II subset. The drawing is organized such that the entities reside individually by entity and form number within one box of a grid. This grid box is labeled to show which entity it should contain. All entities are model mode entities and some are three-dimensional. The drawing is C-sized.

3.2 The L-bracket Drawing

The L-bracket drawing incorporates all of the structure entities (IGES entity numbers 304-410) specified in the MIL-D-28000 Class II subset. The l-bracket is stored as a three-dimensional model and is represented on a C-sized drawing by four views. Draw mode entities detail and dimension the l-bracket's views. The drawing is meant to resemble a workable engineering drawing.

3.3 Development of the IGES Files

The N-entity and L-bracket drawings were drafted on a CAD system, then pre-processed into IGES files. Because the pre-processed IGES files did not completely conform to IGES Version 4.0 and MIL-D-28000, did not include all desired Class II entities, and included unwanted volunteer entities; the files were hand edited. During this hand editing, the criteria discussed in the "Guide to Developing IGES Test Cases" written by the IGES Test Case Subcommittee of the National IGES/PDES Committee was adhered to where ever possible. This hand editing produced IGES files that incorporate all MIL-D-28000 Class II entities and pass several IGES analyzers with no accountable errors. The two analyzers referred to are the IGES Model Testing System and the IGES Data Analysis Company Parser/Verify and View software package.

The completed IGES files were then copied to a 9-track tape in accordance with MIL-STD-1840A. 1840A declaration files accompany the IGES files on the 9-track tape.

3.4 The Scripts

The reference drawing packet contains two different kinds of scripts. The generation scripts describe how to create the reference drawings on a CAD system during the pre-processor test and are designed to be generic enough to allow drawing generation on any CAD system. The evaluation scripts describe how to evaluate the CAD model that appears during a post-processor test, and they ask questions that try to address DOD's present requirements for an engineering drawing digital transfer. CTN's understanding is that, presently, DOD requires only accurate pictures of the engineering drawings.

3.5 The Procedures

The CTN's procedures for testing both the pre- and post-processors follow the testing procedures proposed by the National IGES/PDES Testing Subcommittee. Other procedures were derived from available hardware and software resources and past experience.

4.0 Conclusion

By following the procedures described in this CTN MIL-D-28000 Class II Reference Drawing Packet and by referring to the scripts, plots, and data lists also contained within, one can examine engineering data digital transfers using IGES and MIL-D-28000. This packet does not validate a vendor's conformance to MIL-D-28000 Class II, but instead allows the CALS Test Network to demonstrate

industry/government's use of the MIL-D-28000 specification
in accordance with the CALS initiative.

Attachment A

Procedures for Executing the CTN Reference Drawing
IGES Pre-processor Test

1. Follow the script to generate both the N-entity and the
    L-bracket reference drawings on your native CAD system
    to the system's best abilities. Record any problems
    encountered or deviations taken while following the
    generic script on the attached incident report sheets.
    Use additional sheets if necessary.

    Try to create the entities on the CAD system so that
    the desired IGES entity is pre-processing into the IGES
    file. The scripts specify which entities are the
    desired entities. To accomplish this, we recommend
    that these scripts be followed in the presence of both
    a knowledgeable CAD operator and an experienced IGES
    person, both people preferably supplied by the CAD
    vendor. This will insure the best transfer possible
    with a particular CAD vendor's software.

    Furthermore, although the CAD system may not support
    the "desired" IGES entity, try to match the appearance
    of the drawings using other entities allowed in MIL-D-
    28000 Class II.

2. Pre-process the CAD drawings into the IGES formats
    using any available switches to create MIL-D-28000
    Class II files. Place the required MIL-D-28000 Class
    II Start Section information into the files. Name the
    IGES files the same names as the CAD parts. Record any
    errors the system reports.

3. Prepare a MIL-STD-1840A compliant 9-track tape
    containing both the N-entity and L-bracket IGES files
    and their corresponding declaration files. Be sure to
    include the proper 1840A header information to the IGES
    files and copy all files to the tape with the
    appropriate 1840A format. Record any difficulties
    experienced.

4. If you are conducting a self-test, collect the tape and
    all incident reports from steps 1, 2, and 3 for
    evaluation. If you pre-arranged a formal CTN test and
    obtained CTN approval, send the tape and all incident
    reports from steps 1, 2, and 3 to the CALS Test
    Network.

5. Evaluate the data. The CALS Test Network will and
    anyone conducting a self-test should:

    a. Check the tape for proper MIL-STD-1840A formats.

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b. Check the tape for appropriate MIL-STD-1840A declaration information.

c. Check the IGES file for appropriate MIL-STD-1840A header information.

d. Examine the IGES file visually for format and content.

e. Parse and verify the IGES file using various IGES analyzers to check for IGES syntax errors and illegal MIL-D-28000 Class II constructs.

f. View the graphics the IGES file generated with IGES viewing packages.

g. Pinpoint any file, IGES processor, IGES standard, and/or military standard inefficiencies using the above software and personal knowledge.

h. Bring the findings to the appropriate parties for correction (either vendor, CAD system operator, IGES Committee, or the military standard's sponsor).

i. On CTN-arranged tests, the CTN will publicly publish results of findings.

Attachment B

N-entity Generation Script

Part)   Create a part named "NENTITY".

Drawing) If the CAD system allows for a separate drawing file
          within the part, create a C-sized drawing named
          "NENTITY" with the drawing origin in the lower left-
          hand corner.

INSERT ALL ENTITIES WHILE WORKING IN THE TOP VIEW CONSTRUCTION
PLANE. THIS CONSTRUCTION PLANE OR REQUIRED COORDINATE
ORIENTATION IS SHOWN (LABEL A) ON THE A-SIZED, N-ENTITY PLOT
ATTACHED TO THIS SCRIPT. ALL MODEL COORDINATES (X,Y,Z) REFERRED
TO IN THIS SCRIPT ARE BASED ON THIS COORDINATE ORIENTATION. NAME
THIS VIEW "A".
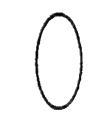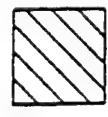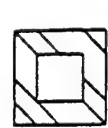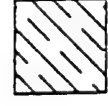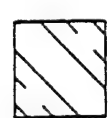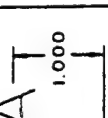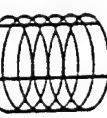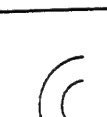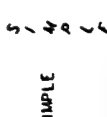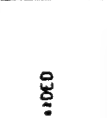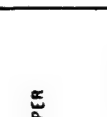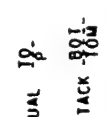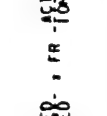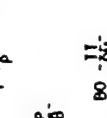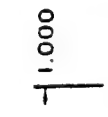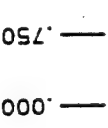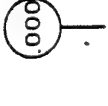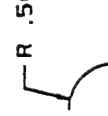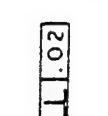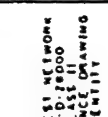
CREATE THE FOLLOWING ENTITIES IN THE DEFAULT COLOR AND DEFAULT
LEVEL OF THE CAD SYSTEM. INSERT ALL ENTITIES IN MODEL MODE.

IN EVERY INSTANCE, TRY TO CREATE THE ENTITY ON THE CAD SYSTEM
SUCH THAT UPON PRE-PROCESSING THE PART INTO IGES, THE DESIRED
ENTITY AND FORM NUMBER APPEAR IN THE IGES FILE. THE DESIRED
ENTITY AND FORM NUMBERS ARE THOSE NUMBERS ALONG THE LEFT-HAND
MARGIN PRECEDING THE CREATION OR INSERTION COMMAND.

Grid lines)

          Insert the following grid lines:

          a)   from (1,16,0)   to (1,0.01,0)
          b)   (3,16,0)   (3,0.01,0)
          c)   (5,16,0)   (5,0.01,0)
          d)   (7,16,0)   (7,0.01,0)
          e)   (9,16,0)   (9,0.01,0)
          f)   (11,16,0)   (11,0.01,0)
          g)   (13,16,0)   (13,0.01,0)
          h)   (15,16,0)   (15,0.01,0)
          i)   (17,16,0)   (17,0.01,0)
          j)   (19,16,0)   (19,0.01,0)
          k)   (21,16,0)   (21,0.01,0)
          l)   (21,16,0)   (1,16,0)
          m)   (1,14,0)   (21,14,0)
          n)   (1,12,0)   (21,12,0)
          o)   (1,10,0)   (21,10,0)
          p)   (1,8,0)   (21,8,0)
          q)   (1,6,0)   (21,6,0)
          r)   (1,4,0)   (21,4,0)
          s)   (1,2,0)   (21,2,0)
          t)   (1,0.01,0)   (21,0.01,0)

SUPER
IMBEDDED
DUAL STACK
SIMPLE
LABEL
FRACTION
M STACK RIGHT
M STACK CENTER
M STACK LEFT
SUPER SUB
SUB

Ø.500
45.00°
R .500
.02
A2
AB
-C-
000
1.000
.750
.000

CAL & TEST NETWORK
CLASS II
REFERENCE DRAWING
M-ENTITY

TOWARD OBSERVER

100)   Create a circular arc centered at (2,15,0) with a
            radius of 0.5 inches and traced out counterclockwise
            from 270 to 180 degrees.

102)   a)   Insert a point at (3.5,15,0).
       b)   Insert a line from (3.5,15,0) to (3.5,15.5,0).
       c)   Insert an arc centered at (3.5,15,0) with a radius of
            0.5 inches and traced out counterclockwise from 0 to 90
            degrees.
       d)   Insert a cubic parametric spline through the points
            (4,15,0), (4.5,14.75,0), and (4.75,14.75,0).
       e)   Group the point, line, arc, and spline together to form
            one entity. Use the composite curve entity (IGES
            entity 102) if your system supports it.

104 F0)   Insert a conic with the general equation:

            $4x^2 + 0xy + y^2 - 48x - 30y + 368.75 = 0$

            If the CAD system will not accept a general equation,
            this conic is an ellipse centered at (6,15,0) with a
            major axis of 1.0 inches and a minor axis of 0.5
            inches. The major axis parallels the vertical axis.

104 F1)   Insert an ellipse centered at (8,15,0) with a major
            axis of 1.0 inches and a minor of 0.5 inches. Position
            the ellipse so that the major axis parallels the
            horizontal axis.

            If needed, the general equation of this conic is:

            $x^2 + 0xy + 4y^2 - 16x - 120y + 963.75 = 0$

104 F2)   Insert a horizontal hyperbola centered at (10.25,15,0)
            such that only the left side is visible and that it
            extends 0.25 inches toward the negative x-direction.
            Refer to the N-entity plot for a pictorial description.

            If needed, the general equation of this conic is:

            $x^2 + 0xy - 4y^2 - 20.5x + 120y - 795 = 0$
            For $9.75 \leq x \leq 10$

104 F3)   Insert a vertical parabola with a vertex of (12,15,0)
            and the focus point at (12,15.25,0). Extend the
            parabola into the positive y-direction to make it 0.25
            inches tall. Refer to the plot for a pictorial
            description.

            If needed, the general equation of this conic is:

            $x^2 + 0xy + 0y^2 - 24x - y + 159 = 0$
            For $15 \leq y \leq 15.25$

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106 F11) a) Insert a circular arc centered at (14,14.75,0)
              with a radius of 0.5 and traced out
              counterclockwise from 0 to 180 degrees.
          b) Transform the circular arc into a "linear planar
              curve" entity (IGES entity 106 Form 11) - a curved
              string of many short straight segments.

106 F12) Insert a three-segmented string as one entity through
          the 3D points:

              (15.5,14.5,0)
              (15.75,15,1)
              (16,14.75,2)
              (16.5,15.5,3)

106 F20) a) Insert a point at (18,15.25,0) and at
              (18,14.75,0).
          b) Insert a centerline between these two points to
              create the "centerline through points" entity (106
              Form 20) in the IGES file if possible. This
              centerline should extend between approximately
              (18,15.4,0) and (18,14.6,0).

106 F21) a) Insert a circle centered at (20,15,0) with a 0.5
              inch radius.
          b) Create a crosshair through this circle using the
              "centerline through circle center" entity (106
              Form 21) if possible. This is a single entity
              composed of both a vertical and a horizontal
              centerline. These centerlines should extend
              between approximately (20.6,15,0) to (19.4,15,0)
              and (20,15.6,0) to (20,14.4,0).

106 F31) a) Insert a square as a single, four-sided entity
              between the points:

              (1.5,13.5,0)
              (2.5,13.5,0)
              (2.5,12.5,0)
              (1.5,12.5,0)

          b) Create solid crosshatching (106 Form 31 - parallel
              line segments) inside this square. This pattern
              usually represents cast or malleable iron or
              general use for all materials. Insert the
              crosshatching with a spacing of 0.2 inches and at
              an angle of 45 degrees.

106 F32) a) Insert eight lines between the points:

              (3.5,13.5,0) and (4.5,13.5,0)
              (4.5,13.5,0)   (4.5,12.5,0)
              (4.5,12.5,0)   (3.5,12.5,0)
              (3.5,12.5,0)   (3.5,13.5,0)

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```
(3.75,13.25,0)      (4.25,13.25,0)
(4.25,13.25,0)      (4.25,12.75,0)
(4.25,12.75,0)      (3.75,12.75,0)
(3.75,12.75,0)      (3.75,13.25,0)
```

to create a square shape within a square.

b)   Insert crosshatching (106 Form 32 - parallel line
     segments in pairs with a gap between pairs)
     between the outer square and the inner square.
     This pattern usually represents steel. Insert the
     crosshatching with a spacing of 0.177 inches and
     at an angle of 45 degrees. Refer to the N-entity
     plot for further clarification of the pattern
     definition.

106 F33) a)   Insert four lines from:

```
(5.5,13.5,0) to (6.5,13.5,0)
(6.5,13.5,0)    (6.5,12.5,0)
(6.5,12.5,0)    (5.5,12.5,0)
(5.5,12.5,0)    (5.5,13.5,0)
```

b)   Insert crosshatching (106 Form 33 - an alternating
     pattern of a solid line and a set of collinear
     dash segments) inside the square that the above
     lines form. This pattern usually represents
     bronze, brass, copper, and compositions. Insert
     the crosshatching with a spacing of 0.167 inches
     and at an angle of 45 degrees. Again, refer to
     the plot for clarification.

106 F34) a)   Insert two lines from (7.5,12.5,0) to (8.5,12.5,0)
               and (8.5,12.5,0) to (8.5,13.5,0).

b)   Insert a circular arc centered at (8.5,12.5,0),
     with a radius of 1 inch, and arced between
     (8.5,13.5,0) and (7.5,12.5,0) counterclockwise.

c)   Insert crosshatching (106 Form 34 - parallel lines
     in quadruples with a gap between groups) inside
     the two lines and the arc. This pattern usually
     represents rubber, plastic, and electrical
     insulation. Insert the crosshatching with a
     spacing of 0.1 inches and at an angle of 45
     degrees.

106 F35) a)   Insert four lines from:

```
(9.5,13.5,0) to (10.5,13.5,0)
(10.5,13.5,0)   (10.5,12.5,0)
(10.5,12.5,0)   (9.5,12.5,0)
(9.5,12.5,0)    (9.5,13.5,0)
```

b)   Insert crosshatching (106 Form 35 - triples of
     parallel lines consisting of two solid lines and a
     set of collinear dash segments between them with a
     gap between triples) inside the four lines. This
     pattern usually represents titanium and refractory
     material. Insert the crosshatching with a spacing
     of 0.2 inches and at an angle of 45 degrees.

106 F36)   a)   Insert four lines from:

(12,12.5,0) to   (11.5,12.5,0).
(11.5,12.5,0)   (11.5,13.5,0)
(11.5,13.5,0)   (12.5,13.5,0)
(12.5,13.5,0)   (12.5,13,0)

b)   Insert a circular arc centered at (12.5,12.5,0),
     with a radius of 0.5 inches, and arced between
     (12.5,13,0) and (12,12.5,0) counterclockwise.

c)   Insert crosshatching (106 Form 36 - parallel sets
     of collinear dash segments) inside these two lines
     and the arc. This pattern usually represents
     marble, slate, glass, porcelain. Insert the
     crosshatching with a spacing of 0.167 inches and
     at an angle of 45 degrees.

106 F37)   a)   Insert four lines from:

(13.5,13.5,0) to (14.5,13.5,0)
(14.5,13.5,0)   (14.5,12.5,0)
(14.5,12.5,0)   (13.5,12.5,0)
(13.5,12.5,0)   (13.5,13.5,0)

b)   Insert crosshatching (106 Form 37 - two
     perpendicular sets of parallel lines) inside the
     four lines. This pattern usually represents white
     metal, zinc, lead, babbitt, and alloys. Insert
     the crosshatching with a spacing of 0.177 inches
     and at an angle of 45 degrees.

106 F38)   a)   Insert four lines from:

(15.5,13,0) to (15.5,12.5,0)
(15.5,12.5,0)   (16.5,12.5,0)
(16.5,12.5,0)   (16.5,13.5,0)
(16.5,13.5,0)   (16,13.5,0).

b)   Insert a cubic parametric spline through the three
     points:

(15.5,13,0)
(15.7,13.1,0)
(16,13.5,0).

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c)   Insert crosshatching (106 Form 38 - two perpendicular sets of lines with the principal set solid from edge to edge and the second set consisting of collinear dash segments alternating on the solid lines) inside these four lines and the spline. This pattern usually represents magnesium, aluminum, and aluminum alloys. Insert the crosshatching with a spacing of 0.167 inches and at an angle of 45 degrees.

106 F40)   a)   Insert a point at (17.5,13.5,0) and at (17.5,12.5,0).

b)   Insert the letter "A" at (17.75,13.25,0) with a bottom-left-justified text origin. The text height should be 0.5 and width 0.5 inches. Use the standard block (or default) text font.

c)   Create a linear dimension between the two points. Center the "1.000" text around (18.5,13,0) and use a text height of 0.125 inches. Use the default arrowhead sizes. The upper witness line leading from the point to the arrowhead should blank out while over the letter to allow clear reading of the text "A".

106 F63)   Create a rectangle or a "simple closed area" entity (106 Form 63) consisting of one entity between the points:

(19.5,12.75,0)
(19.5,13.5,0)
(20.5,13.5,0)
(20.5,12.75,0)

108 F0)   a)   Insert two lines from:

(1.5,11,0) to (2,11.75,0)
(2.5,11,0)   (2,11.75,0)

b)   Create a new view named "B" with the clipping planes (IGES entities 108 Form 0) at:

x = 1
x = 3
y = 10
y = 11.5

108 F1)   Create a bounded plane (108 Form 1) at:

x = 3.5
x = 4.5
y = 10.5
y = 11.5

This should create a rectangle or "bounded curve" between the points:

    (3.5,10.5,0)
    (4.5,10.5,0)
    (4.5,11.5,0)
    (3.5,11.5,0)

110)   Create a line from (6,11.5,0) to (6,10.5,0).

112)   Create a cubic parametric spline curve through the points:

    (7.5,11.5,0)
    (8.25,11.25,0)
    (8.5,11,0)
    (8.5,10.75,0)
    (8.25,10.5,0)
    (8,10.5,0)
    (7.75,10.75,0)
    (7.75,11,0)
    (8.5,11.5,0).

114)   a)   Insert two cubic parametric spline curves through:

    (9.5,11.5,1)
    (9.75,11.75,1)
    (10.25,11.5,1)
    (10.5,11.5,1)

       and

    (9.5,10.75,0)
    (9.75,11,0)
    (10.25,10.75,0)
    (10.5,10.75,0).

    b)   Create a cubic parametric spline surface (IGES entity 114) between these two splines. Mesh the surface to make 5 mesh spacings in both the horizontal and vertical directions.

116)   Insert a point at (12,11,0).

118 F0)   a)   Insert a line from (13.5,11.5,0) to (13.5,10.5,0).

    b)   Insert a circular arc through the points (14.5,11.5,0), (14.25,11,0), and (14.5,10.5,0).

    c)   Create a ruled surface with equal relative arc lengths (IGES entity 118 Form 0). Mesh the surface to make 5 mesh spacings in the horizontal direction.

118 F1)   a)   Insert a line from (15.5,11.5,0) to (15.5,10.5,0).

          b)   Insert a circular arc through the points
               (16.5,11.5,0), (16.25,11,0), and (16.5,10.5,0).

          c)   Create a ruled surface with equal relative
               parametric values (IGES entity 118 Form 1). Mesh
               the surface to make 5 mesh spacings in the
               horizontal direction.

120)   a)   Insert a line from (18,11.75,0) to (18,10.5,0).

          b)   Insert a circular arc through the points
               (18.5,11.5,0), (18.25,11.125,0), and
               (18.5,10.75,0).

          c)   Generate a surface of revolution with the circular
               arc as the generatrix and the line as the axis of
               revolution. Mesh the surface to make 10 mesh
               spacings in the vertical direction.

122)   a)   Insert a line from (19.75,10.75,0) to (20,11,-1).

          b)   Insert a circular arc through the points
               (19.75,11,0), (20,11.25,0), and (20.25,11,0).

          c)   Generate a tabulated cylinder 1 inch into the
               negative z-direction following the vector path of
               the line. The circular arc is the directrix and
               the line is the generatrix. Mesh the partial
               cylinder to make 5 mesh spacings parallel to the
               length of the cylinder.

124 F0)   a)   Create a subfigure named "ARROW" of an arrow
               shaped figure composed of four lines from:

               (0,0.5,0) to (0,-0.5,0)
               (0,-0.5,0)   (0.3,0,0)
               (0,-0.5,0)   (-0.3,0,0)
               (-0.3,0,0)   (0.3,0,0).

               Note that the arrow points downward.

          b)   Insert the subfigure into the NENTITY drawing at
               the model location (2,9,0) so that the arrowhead
               points left. Try to achieve this orientation
               using a right-hand-coordinate transformation
               matrix (a transformation matrix where the
               determinant of the matrix equals 1).

124 F1)   Insert the same subfigure from above named "ARROW" into
          the NENTITY drawing at the model location (4,9,0) so
          that the arrowhead points right. Try to achieve this

orientation using a left-hand-coordinate transformation
matrix (a transformation matrix where the determinant
of the matrix equals -1).

126 F0)   Insert a rational b-spline curve of degree 5 through
          the points: (5.5,9,0), (5.75,9.25,0), (6.25,9,0), and
          (6.5,9,0).

128 F0)   a)   Insert a rational b-spline curve of degree 5
               through the points: (7.5,9.5,1), (7.75,9.75,1),
               (8.25,9.5,1), and (8.5,9.5,1).

          b)   Insert a rational b-spline curve of degree 5
               through the points: (7.5,8.75,0), (7.75,9,0),
               (8.25,8.75,0), and (8.5,8.75,0).

          c)   Create a rational b-spline surface of degree 5
               between these two curves. Mesh the surface to
               make 5 mesh spacings in both the horizontal and
               vertical directions.

128 F2)   a)   Insert a rational b-spline curve of degree 7 that
               takes the form of a circle through the points:

               (10,9.25,0)
               (9.5,8.75,0)
               (10,8.25,0)
               (10.5,8.75,0)

          b)   Copy this circular shaped rational b-spline into
               the z = 1 plane. This will make a curve through
               the points:

               (10,9.25,1)
               (9.5,8.75,1)
               (10,8.25,1)
               (10.5,8.75,1)

          c)   Rotate the two curves -120 degrees around an x-
               axis that passes through the origin of the first
               curve (the curve on the z=0 plane).

          d)   Create a rational b-spline surface of degree 7
               between the two curves to make a cylindrical
               shaped surface. Mesh the surface to make 5 mesh
               spacings in both the horizontal and vertical
               directions.

128 F3)   a)   Insert a rational b-spline curve of degree 7 that
               takes the form of a circle through the points:

               (12,9.25,0)
               (11.5,8.75,0)
               (12,8.25,0)

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(12.5,8.75,0)

b)   Insert a rational b-spline curve of degree 7 that takes the form of a circle through the points:

(12,9,1)
(11.75,8.75,1)
(12,8.5,1)
(12.25,8.75,1)

c)   Rotate the two curves -120 degrees around an x-axis that passes through the origin of the first curve (the larger curve).

d)   Create a rational b-spline surface of degree 7 between the two curves to make a cone shaped surface. Mesh the surface to make 5 mesh spacings in both the horizontal and vertical directions.

128 F4)   a)   Insert a line from (14,8.5,0) to (14,9.75,0).

b)   Insert a circle through the three points:

(14,9.5,0)
(13.5,9,0)
(14,8.5,0)

c)   Rotate the circle around the line to create a rational b-spline surface of degree 5 shaped like a sphere (IGES entity 128 Form 4). Mesh the surface 5 X 5.

128 F5)   a)   Insert a line from (16,9.5,0) to (16,8.5,0).

b)   Insert a circle through the three points:

(16.5,9.25,0)
(16.25,9,0)
(16.5,8.75,0)

c)   Rotate the circle around the line to create a rational b-spline surface of degree 5 shaped like a torus or donut (IGES entity 128 Form 5). Mesh the surface 10 X 10.

128 F9)   a)   Insert a spline of degree 2 through the points:

(17.5,9.25,1)
(18,9.75,1)
(18.5,9.25,1)

b)   Insert another spline of degree 2, but this time through the points:

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(17.5,8.5,0)
(18,9,0)
(18.5,8.5,0)

c) Generate a rational b-spline general quadratic (degree 2) surface (IGES entity 128 Form 9) between the two splines. Mesh the surface 5 X 5.

130) a) Insert a circular arc through the three points:

(19.5,8.75,0)
(20,9.25,0)
(20.5,8.75,0)

b) Create an offset of this curve that is 0.25 inches smaller in radius. Try to produce the offset curve entity in the IGES file (130).

140) a) Insert a line from (1.5,7.5,0) to (1.5,6.5,0).

b) Insert a circular arc through the points:

(2.5,7.5,0)
(2.25,7,0)
(2.5,6.5,0)

c) Create a planar ruled surface between the line and the arc meshed with 5 horizontal mesh spacings.

d) Offset this surface into the negative z-direction 1 inch. Try to produce the offset surface entity in the IGES file (140).

e) Rotate both surfaces 20 degrees around an x-axis to make both surfaces visible. The rotation point should be the lower end of the line component of the original ruled surface.

142) a) Insert a parametric spline through the points:

(3.5,7.5,1)
(3.75,7.75,1)
(4.25,7.5,1)
(4.5,7.5,1)

b) Insert a second parametric spline, but this time through the points:

(3.5,6.75,0)
(3.75,7,0)
(4.25,6.75,0)
(4.5,6.75,0)

c)   Generate a parametric spline surface between these two splines. Mesh it 5 X 5.

d)   Insert a circle of diameter 0.5 inches centered at (4,7.25,0).

e)   Project the circle 2 inches into the positive z-direction so that it cuts through the parametric spline surface and leaves the projection of the curve on the parametric surface.

f)   Delete all construction entities except for the circle; blank the circle.

144)   a)   Insert a parametric spline through the points:

(5.5,7.5,1)
(5.75,7.75,1)
(6.25,7.5,1)
(6.5,7.5,1)

b)   Insert a second parametric spline, but this time through the points:

(5.5,6.75,0)
(5.75,7,0)
(6.25,6.75,0)
(6.5,6.75,0)

c)   Generate a parametric spline surface between these two splines. Mesh it 5 X 5.

d)   Insert a circle of diameter 0.5 inches centered at (6,7.25,0).

e)   Project the circle 2 inches into the positive z-direction so that it cuts through the parametric spline surface and leaves the projection of the curve on the parametric surface.

f)   Delete all construction entities except for the circle; blank the circle.

g)   Trim the parametric spline surface back to the spline that is left by the projected curve.

FOR THE FOLLOWING THREE DIMENSIONS, USE THE STANDARD BLOCK (OR DEFAULT) TEXT FONT WITH A TEXT HEIGHT OF 0.156 INCHES. ALSO, USE THE IGES-DEFINED TRIANGLE TYPE ARROWHEADS WITH ARROWHEAD HEIGHT = 0.15 INCHES AND WIDTH = 0.05 INCHES.

202)   a)   Insert a line from (7.5,7,0) to (7.25,6.75,0).

b)   Insert a line from (7.25,6.75,0) to (7.5,6.75,0).

c) Create an angular dimension between these two lines. Place the bottom-left-justified text "45.00° " at (7.9,7.1,0).

206) a) Insert a circle at (9.5,7,0) with a diameter of 0.5 inches.

b) Create a diameter dimension with the two arrows on the inside of the circle and the text "φ.500" on the outside of the circle. Place the bottom-left-justified text at (9.9,7.3,0).

210) a) Insert a point at (11.5,6.75,0).

b) Create a label with the text "LABEL" that points to the point entity. The leader that leads from the point to the label should be two-segmented. Place the arrowhead on the point, the end of the leader's first segment at (11.46,7.25,0), and the end of the second segment at (11.75,7.25,0).

FOR THE FOLLOWING GENERAL NOTE ENTITIES (212), USE THE STANDARD BLOCK (OR DEFAULT) TEXT FONT, A TEXT HEIGHT OF 0.125 INCHES, AND A TEXT WIDTH OF 0.1 INCHES. SELECT THE ORIGIN OF THE TEXT BOTTOM-LEFT-JUSTIFIED UNLESS OTHERWISE STATED.

212 F0) a) Insert the text string "SIMPLE" horizontally at (13.5,7.125,0).

b) Insert the text string "SIMPLE" vertically at (14.5,7.5,0). Change the text slant to -30 degrees.

212 F1) Insert the text "DUAL" and "STACK" as one text string such that the words are both left justified and the second word is displayed below the first. Place the origin of the text at (15.5,7.125,0).

212 F2) a) Insert the text "IMBEDDED" with the origin of the text string at (17.5,7.125,0).

b) Change the font of the middle three letters, "BED", of the text string to the IGES Font 1002. This will change the letters "BED" to the symbols "÷ Δ ≥".

212 F3) Insert the text string "SSUPER" such that the origin is at (19.5,7.125,0) and the word "SUPER" is a superscript of "S".

212 F4) Insert the text string "SSUB" such that the origin is at (1.5,5.125,0) and the word "SUB" is a subscript of "S".

212 F5)   Insert the text "S", "SUPER", and "SUB" as one text
           string such that the origin is at (3.5,5.125,0) and the
           word "SUPER" is a superscript of "S" and "SUB" is a
           subscript of "S".

212 F6)   Insert the text "M", "STACK", and "LEFT" as one multi-
           lined text string such that the origin of the text
           string is at (5.5,5.25,0) and all words are left-
           justified to a common margin.

212 F7)   Insert the text "M", "STACK", and "CENTER" as one
           multi-lined text string that is bottom-center-justified
           with the origin at (8,5.25,0).

212 F8)   Insert the text "M", "STACK", and "RIGHT" as one multi-
           lined text string that is bottom-right-justified with
           the origin at (10.5,5.25,0).

212 F100) Insert a multi-lined text string that is bottom-left-
           justified with the origin at (11.5,5.25,0) as follows:

           a)   1st line is " FRAC" such that the substring
                 "FRAC" is a subscript of the two spaces.
           b)   2nd line is "S ----".
           c)   3rd line is " TION" such that the substring "TION
                 is a superscript of the two spaces.

           The substring "FRAC" is a subscript of the spaces so
           that it appears to be a superscript of the "S" and vise
           versa for the substring "TION".

212 F101) Insert a multi-lined text string with the origin at
           (13.5,5.5,0) as follows:

           a)   1st line is "   TO" such that the substring
                 "TO" is a subscript of the six spaces.
           b)   2nd line is "DUAL ---".
           c)   3rd line is "   P" such that the substring "P"
                 is a superscript of the seven spaces.
           d)   4th line is blank.
           e)   5th line is "   BOT" such that the substring
                 "BOT" is a subscript of the seven spaces.
           f)   6th line is "STACK -----".
           g)   7th line is "   TOM" such that the substring
                 "TOM" is a superscript of the seven spaces.

212 F102) Insert a multi-lined text string with the origin at
           (15.125,5.25,0) as follows:

           a)   1st line is "   BED   ACT" with four spaces
                 before "BED" and eight spaces before "ACT" and
                 such that the substrings "BED" and "ACT" are both
                 subscripts of the spaces.

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b) 2nd line is "IM ----- ≠ FR ----".
c) 3rd line is "   DED   ION" with four spaces before "DED" and eight before "ION" and such that the substrings "DED" and "ION" are both superscripts of the spaces.

212 F105) Insert a multi-lined text string with the origin at (17.125,5.875,0) as follows:

a) 1st line is "   O" such that the substring "O" is a subscript of the twelve spaces.
b) 2nd line is "   T ----". There are nine spaces before the "T".
c) 3rd line is "   P" such that the substring "P" is a superscript of the twelve spaces.
d) 4th line is blank.
e) 5th line is "   SUP" such that the substring "SUP" is a subscript of the four spaces.
f) 6th line is "FR -----".
g) 7th line is "   SUB" such that the substring "SUB" is a superscript of the four spaces.
h) 8th line is blank.
i) 9th line is "   TT" such that the substring "TT" is a subscript of the twelve spaces.
j) 10th line is "   BO ----". There are eight spaces before "BO".
k) 11th line is "   OM" such that the substring "OM" is a superscript of the twelve spaces.

INSERT THE FOLLOWING LEADERS OR ARROWS (214) WITH THE ARROWHEAD POINTING LEFT, THE ARROWHEAD HEIGHT = 0.15 INCHES, AND ARROWHEAD WIDTH = 0.05 INCHES UNLESS OTHERWISE STATED. REFER TO THE IGES SPECIFICATION OR TO THE LARGE C-SIZED, N-ENTITY PLOT FOR A PICTORIAL DESCRIPTION OF THE DESIRED ARROWHEAD TYPE.

214 F1) Insert a leader with a wedge type arrowhead between the points (19.5,5.0,0) and (20.5,5.0,0).

214 F2) Insert a leader with a triangle type arrowhead between the points (1.5,3.0,0) and (2.5,3.0,0).

214 F3) Insert a leader with a filled triangle type arrowhead between the points (3.5,3.0,0) and (4.5,3.0,0).

214 F4) Insert a leader with no arrowhead between the points (5.5,3.0,0) and (6.5,3.0,0).

214 F5) Insert a leader with a circle type arrowhead between the points (7.5,3.0,0) and (8.5,3.0,0). Here, both the arrowhead height and width should be 0.1 inches.

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214 F6)   Insert a leader with a filled circle type arrowhead
           between the points (9.5,3.0,0) and (10.5,3.0,0). Here,
           both the arrowhead height and width should be 0.1
           inches.

214 F7)   Insert a leader with a rectangle type arrowhead between
           the points (11.5,3.0,0) and (12.5,3.0,0). Here, both
           the arrowhead height and width should be 0.1 inches.

214 F8)   Insert a leader with a filled rectangle type arrowhead
           between the points (13.5,3.0,0) and (14.5,3.0,0).
           Here, both the arrowhead height and width should be 0.1
           inches.

214 F9)   Insert a leader with a slash type arrowhead between the
           points (15.5,3.0,0) and (16.5,3.0,0). Here, both the
           arrowhead height and width should be 0.1 inches.

214 F10)   Insert a leader with an integral sign type arrowhead
           between the points (17.5,3.0,0) and (18.5,3.0,0).
           Here, both the arrowhead height and width should be 0.1
           inches.

214 F11)   Insert a leader with an open triangle type arrowhead
           between the points (19.5,3.0,0) and (20.5,3.0,0).

FOR THE NEXT EIGHT ENTITIES (216 - 228 FORM 3), USE THE STANDARD
BLOCK (OR DEFAULT) TEXT FONT AND TEXT HEIGHT OF 0.156 INCHES.
FURTHERMORE, USE TRIANGLE TYPE ARROWHEADS WITH ARROWHEAD
HEIGHT=0.15 INCHES AND WIDTH=0.05 INCHES.

216)   a)   Insert two points: one at (1.5,0.5,0) and one at
                 (2.5,0.5,0).

           b)   Create a linear dimension between the two points
                 centering the text "1.000" around (2,1.25,0). The
                 arrows should be outside the witness lines and
                 approximately 0.2 inches long from arrowhead to
                 tail.

218)   a)   Insert two points: one at (3.5,0.5,0) and one at
                 (4.25,0.5,0).

           b)   Dimension, ordinately, the right point from the
                 left. Place the bottom-left-justified text ".000"
                 at (3.58,1.19,0) and text ".750" at (4.33,1.19,0).
                 Both text blocks should be rotated 90 degrees
                 counterclockwise. Leaders with no arrowheads or
                 witness lines should extend from just above the
                 points to the beginning of the text blocks.

220)   a)   Insert a point at (6,0.5,0).

b)   Dimension this point by placing the origin of the
       bottom-left-justified text ".000" at (5.73,1.33,0)
       and inside of a circle.

       If the CAD system positions the point dimension
       differently and more information is needed: the
       circle's center is at (6,1.41,0) and radius is
       0.314 inches, and the tail of the leader that
       connects the point to the bottom of the circle is
       at (6,1.09,0).

222)   a)   Insert a circular arc centered at (7.25,0.5,0)
              with a radius of 0.5 inches and traced out from 0
              to 90 degrees counterclockwise.

       b)   Radially dimension this arc. Place the origin of
              the bottom-left-justified text "R .500" at
              (7.85,1.42,0). Place the arrowhead of the two-
              segmented leader on the outside of the arc, the
              first segment's end at (7.5,1.5,0), and the second
              segment's end at (7.75,1.5,0).

228 F0) Create a general symbol as one entity containing the
         following entities:

         A general symbol is defined as a symbol which is not
         necessarily a standard symbol.

         a)   A diamond shaped closed figure (one entity) that
                connects the approximate points:

                (10.0,1.5,0)
                (9.5,1,0)
                (10,0.5,0)
                (10.5,1,0).

         b)   A line from approximately (9.5,1,0) to (10.5,1,0).

         c)   A text block "AB" with its bottom-left-justified
                origin at (9.875,0.75,0).

228 F1) Create a datum feature symbol as one entity containing
         the following entities:

         A datum feature symbol is defined as a symbol
         consisting of a frame containing the datum identifying
         letter preceded and followed by a dash.

         a)   A rectangle shaped closed figure (one entity) that
                connects the approximate points:

                (11.75,1,0)
                (11.75,1.31,0)
                (12.36,1.31,0)

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(12.36,1,0).

b)   A text string "-C-" with its bottom-left-justified origin at (11.83,1.08,0).

228 F2)   Create a datum target symbol as one entity consisting of the following entities:

A datum target symbol is defined as a symbol consisting of a circle divided horizontally into two halves with the lower half containing a letter identifying the associated datum, followed by the target number, and an entity attached to the symbol pointing to the target.

a)   A circle approximately centered at (14.25,1.25,0) with a radius of 0.375.

b)   A line from approximately (13.875,1.25,0) to (14.625,1.25,0).

c)   A text block "A2" with its bottom-left-justified origin at (14.125,1,0).

d)   Leader with its arrowhead near (13.625,0.625,0) and its tail on the circle near (13.99,0.98,0).

228 F3)   Create a feature control frame as one entity containing the following entities:

A feature control frame is defined as a symbol consisting of a frame divided into compartments containing the geometric characteristic symbol followed by the tolerance.

a)   A rectangle shaped closed figure (one entity) connecting the approximate points:

(15.5,1,0)
(15.5,1.31,0)
(16.55,1.31,0)
(16.55,1,0)

b)   A text block containing a perpendicular symbol, a frame divider, and then the text ".02 ". Place the entire text block's bottom-left-justified origin at (15.58,1.08,0).

230)   a)   Insert four lines from:

(17.5,1.5,0) to (18.5,1.5,0)
(18.5,1.5,0)   (18.5,0.5,0)
(18.5,0.5,0)   (17.5,0.5,0)
(17.5,0.5,0)   (17.5,1.5,0).

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b) Utilize the sectioned area entity (230) to crosshatch between the lines. The fill should be solid parallel line segments from section edge to edge. They should be angled 45 degrees counterclockwise from the x-axis and spaced 0.2 inches apart.

Title block) Insert the title block "CALS TEST NETWORK
MIL-D-28000
CLASS II
REFERENCE DRAWING
N-ENTITY".
This multi-lined text should be bottom-center-justified with the text origin at (20,1.2,0). The text height and width should both be 0.09 inches.

Incident Report

Incident Report

Attachment C

L-bracket Generation Script

1)   Create a part named "LBRACKT".

2)   If the CAD system allows for a separate drawing file
     within the part, create a C-sized drawing named
     "LBRACKT" with the drawing origin in the lower left-
     hand corner.

VIEW THE MODEL IN THE ISOMETRIC VIEW WITH A TOP CONSTRUCTION
PLANE SELECTED FOR ENTITY INSERTION UNTIL FURTHER NOTICE.
THIS CONSTRUCTION PLANE OR REQUIRED COORDINATE ORIENTATION
IS SHOWN (LABEL A) ON THE A-SIZED, L-BRACKET PLOT ATTACHED
TO THIS SCRIPT. ALL MODEL COORDINATES (X,Y,Z) REFERRED TO
IN THE SCRIPT ARE BASED ON THIS COORDINATE ORIENTATION.

CREATE THE FOLLOWING ENTITIES IN THE DEFAULT COLOR OF THE
CAD SYSTEM AND ON LEVEL 1 UNTIL FURTHER NOTICE.

3)   Create a horizontal line from (0,0,0) to (3,0,0).

4)   Create a vertical line from (3,0,0) to (3,0,0.75).

5)   Create a horizontal line from (3,0,0.75) to (1,0,0.75).

6)   Create a vertical line from (1,0,0.75) to (1,0,3.5).

7)   Create a horizontal line from (1,0,3.5) to (0,0,3.5).

8)   Create a vertical line from (0,0,3.5 to (0,0,0).

9)   Create a fillet with a radius of 0.1 inches at the
     intersection of the [(1,0,3.5),(1,0,0.75)]
     [(1,0,0.75),(3.0,0.75)] and [(1,4,3.5),(1,4,0.75)]
     [(1,4,0.75),(3,4,0.75)] lines. This is labeled "B" on
     the L-bracket plot.

10) Create a three-dimensional model of this L-shape by
     projecting it from y=0 to y=4. If the system does not
     have projection capabilities, one must create the
     three-dimensionality by hand. The created lines should
     be:

                a)   from (0,0,0) to   (0,4,0).
                b)   (0,0,3.5)   (0,4,3.5).
                c)   (1,0,3.5)   (1,4,3.5).
                d)   (3,0,o.75)   (3,4,0.75).
                e)   (3,0,0)   (3,4,0).
                f)   (0,4,3.5)   (1,4,3.5).
                g)   (3,4,0)   (3,4,0.75).
                h)   (0,4,3.5)   (0,4,0).

33

Ø.500

2.000

R .100

.750

1.000
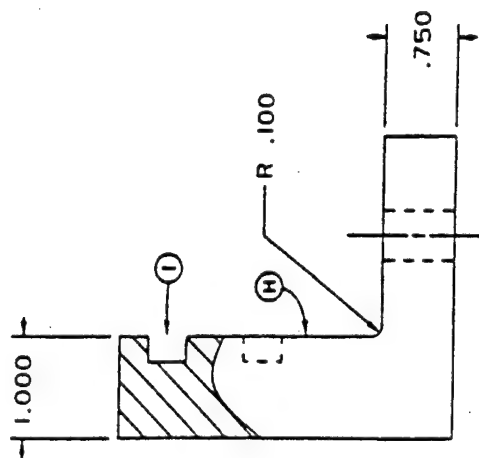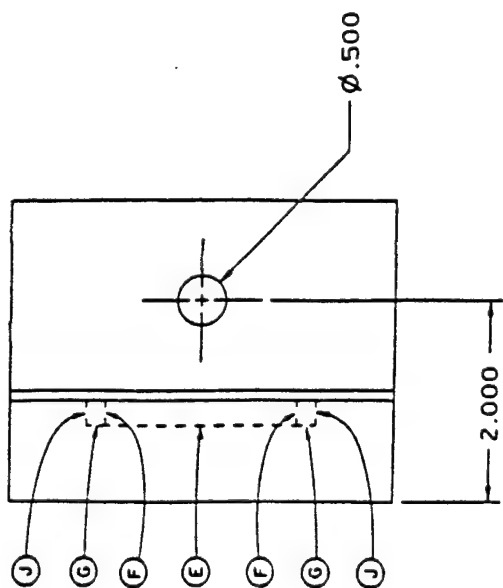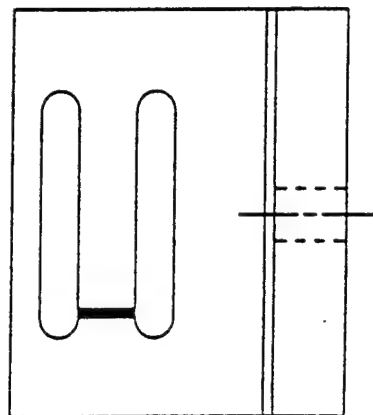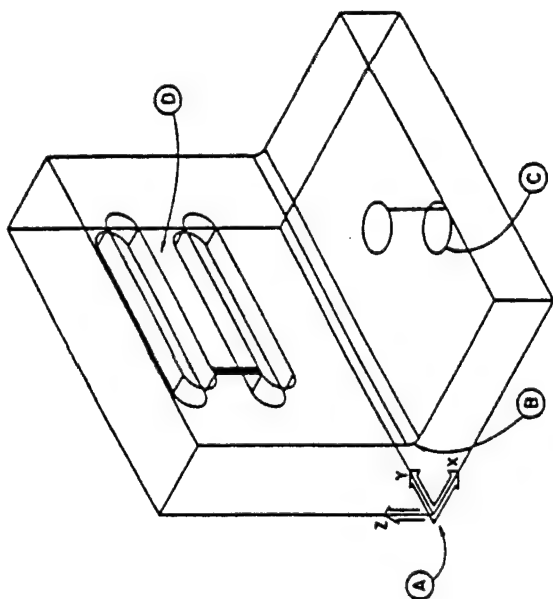
i)	(0,4,0)	(3,4,0).
j)	(3,4,0.75)	(1,4,0.75).
k)	(1,4,0.75)	(1,4,3.5)

11) Create a circle, while still in the top construction plane, 0.5 inches in diameter at (2,2,0). This circle is labeled "C" on the plot.

12) Project the circle through the 1-bracket 0.75 inches in the positive z-direction to display the top of the cylinder at a center of (2,2,0.75).

13) Create a 3D slot (Label D) with the following entities:

    a) line from (1,1,3.2) to (1,3,3.2).
    b) line from (1,1,2.8) to (1,3,2.8).
    c) circular arc through the points (1,1,3.2), (1,0.8,3), and (1,1,2.8).
    d) circular arc through the points (1,3,3.2), (1,3.2,3), and (1,3,2.8).

14) Project this long oval 0.25 of an inch into the negative x-direction. This will create the following entities:

    a) line from (0.75,1,2.8) to (0.75,3,2.8).
    b) line   (0.75,1,3.2)   (0.75,3,3.2).
    c) line   (1,1,2.8)   (0.75,1,2.8).
    d) line   (1,3,2.8)   (0.75,3,2.8).
    e) line   (1,1,3.2)   (0.75,1,3.2).
    f) line   (1,3,3.2)   (0.75,3,3.2).
    g) circular arc through the points (0.75,1,3.2), (0.75,0.8,3), and (0.75,1,2.8).
    h) circular arc through the points (0.75,3,3.2), (0.75,3.2,3), and (0.75,3,2.8).

15) Construct a subfigure out of the slot entities just drawn and save it under the name "SUBFIG". If needed, copy the entities into a separate part and prepare the subfigure there. Maintain the existing origin relationship, in other words, the entity positions should stay the same in relationship to (0,0,0).

16) Insert the subfigure "SUBFIG" into the model at (0,0,-1). This brings the subfigure into the model one inch below the existing slot. Use the "definition levels" entity (IGES entity 406 Form 1) if possible to assign the subfigure to level four. If this entity is not available on the CAD system, assign the subfigure to level four any way possible.

17) Create an "ordered group" using IGES entity 402 Form 15 if possible out of the entities which comprise the top slot (the slot that is not the subfigure).

18) Display this model in the following four views placed at the following locations on a two-dimensional drawing sheet:

       a) front view origin at (3,3). Name it "FRONT".
       b) top view origin at (3,10). Name it "TOP".
       c) side view origin at (12,3). Name it "SIDE".
       d) isometric view origin at (12,10). Name it "ISO".

If the system does not have this capability, make the screen resemble the plot as closely as possible.

19) Create a model line from (1,1,2.8) to (1,1,2.2), then widen the line to produce the "line widening" entity (406 Form 5) in the IGES file. Widen the line to 0.1 inches to the right of the line with no extension and with squared corners. This is meant to resemble, for example, a strip of metalization.

20) Erase from view (don't delete) making use of the "views visible" entity (402 Form 3) the following model lines from the various views for detailing purposes.

       a) Erase from the front and top views the lower slot (the subfigure).
       b) Erase from the top view the two long slot lines which appear superimposed. See label "E".
       c) Erase from the top view the four horizontal short slot lines which reside near the ends of the slot. See label "F". Some of these lines are superimposed on the others.
       d) Erase from the top view the two arcs from the upper slot which appear as short vertical lines. See label "G".
       e) Erase from the front view the two superimposed model lines marked by "H" to allow for properly detailing the slot.
       f) Erase from the front view the two arcs, seen from the side as short vertical lines of the upper slot, to expose the cut out. See label "I".
       g) Erase from the front and side views the two circles and the projection line of the through-hole.

EXIT THE MODEL MODE AND ENTER THE DRAW MODE IF POSSIBLE TO CREATE THE REMAINING ENTITIES. DRAW MODE REQUIRES ONE TO INSERT ENTITIES ON A 2D DRAWING SHEET.

21) Create two solid detailing lines on the front view from the 2D draw mode coordinates (4,3.85) to (4,5.8) and (4,6.2) to (4,6.5).

22) Create the following detailing lines on the top and front views:

      a)   line from (3.75,10.8) to (4,10.8)
      b)   line   (3.75,13.2)   (4,13.2)
      c)   line   (3.75,5.2)   (3.75,4.8)
      d)   line   (3.75,10.8)   (3.75,13.2)
      e)   line   (3.75,11)   (4,11)
      f)   line   (3.75,13)   (4,13)

23) Dash the above detailing lines a) through f) using the line font procedure that will generate a "line font" entity specified by a "repeating visible-blank pattern" (304 Form 2) in the IGES file. All dashes should be .1 inch long and be spaced by .1 inch.

24) Create the following detailing lines on the front view:

      a)   line from (3.75,4.8) to (4,4.8)
      b)   line   (3.75,5.2)   (4,5.2).

25) Dash the above detailing lines a) and b) with a line font specified by a "repeating template subfigure" (304 Form 1). The subfigure should be a line from (0,0,0) to (0.1,0,0) and named "DASH". The repeating subfigure should begin every 0.2 inches making a dashed line with 0.1 inch long dashes and 0.1 inch spaces.

26) Create dashed detailing lines on the front and side views in draw mode space to represent the hidden lines from the through-hole. The lines should be located as follows and dashed in such a way that the line font type appears in the DE section index 4 of the IGES file. All dashes should be 0.1 inch long and be spaced by 0.1 inch.

      a)   line from (4.75,3.75) to (4.75,3)
      b)   line   (5.25,3.75)   (5.25,3)
      c)   line   (13.75,3.75)   (13.75,3)
      d)   line   (14.25,3.75)   (14.25,3)

27) Create a cubic parametric spline curve through the points:

      a) (3,5)
      b) (3.5,5.5)
      c) (4,5.4)

28) Crosshatch the 1-bracket area above the spline with solid lines at an angle of 45 degrees and with 0.2 inch

spacing. This depicts the exposed interior of the l-bracket.

29) Create centerlines through the points (5,3.325) on the front view and (14,3.325) on the side view (to create the IGES entity 106 Form 20). The approximate length of the centerlines should be 1.25 inches. These centerlines represent the center of the through-hole as viewed from the front and side.

30) Create a crosshair centerline through the circle center at (5,12) on the top view (to create entity 106 Form 21). The approximate length of the crosshairs should be 1.25 inches.

INSERT THE FOLLOWING FIVE DIMENSIONS USING THE STANDARD BLOCK (OR DEFAULT) TEXT FONT AND A TEXT HEIGHT OF 0.2 INCHES. ALSO, USE THE IGES-DEFINED TRIANGLE TYPE ARROWHEAD WITH THE ARROWHEAD HEIGHT 0.15 INCHES AND WIDTH 0.05 INCHES.

31) Dimension the one inch thickness of the l-bracket's vertical leg on the front view at (3.5,7.5). The text should state "1.000". Refer to the L-bracket plot for a pictorial description of this location.

32) Dimension the two inch distance between the center of the circle and the left side of the l-bracket on the top view at (4,9). The text should state "2.000". Again, refer to the plot.

33) Dimension the 0.75 inch thickness of the l-bracket's horizontal leg on the front view at (7,3.375). The text should state ".750".

34) Dimension the 0.1 inch fillet with a two segmented leader line with the segment ends at (5,5) and (5.5,5). The text should state "R .100".

35) Dimension the 0.5 inch diameter circle with a two segmented leader line with the segment ends at (6.5,10.5) and (7,10.5). The text should state "ϕ.500".

36) Create a border around the l-bracket's four views. The border is made up of four lines from:

     a) (1,1) to (21,1)
     b) (21,1)   (21,16)
     c) (21,16)   (1,16)
     d) (1,16)   (1,1)

37) Insert two lines to create a title block border from:

     a) (19,1) to (19,3)

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b)   (19,3)   (21,3)

38)   Insert into the title block the text "CALS TEST NETWORK
                                          MIL-D-28000
                                           CLASS II
                                      REFERENCE DRAWING
                                          L-BRACKET".
The text should be multi-lined and bottom center
justified around the origin (20,2.25). Text height and
width should be 0.09 inches.
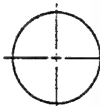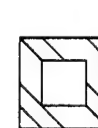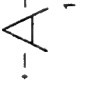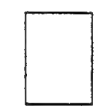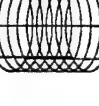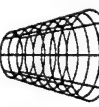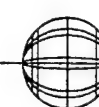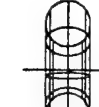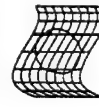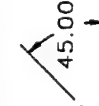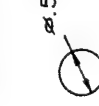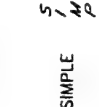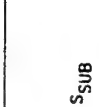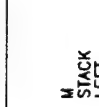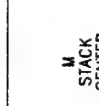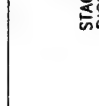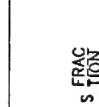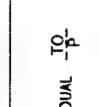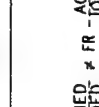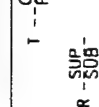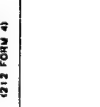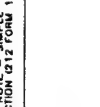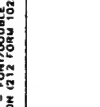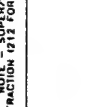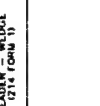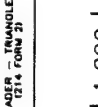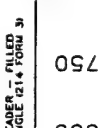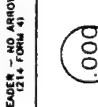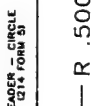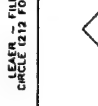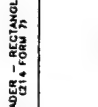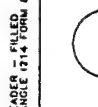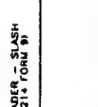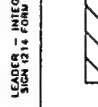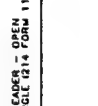
39)   Assign the crosshatching the color magenta by using the
"color definition" entity (314) if possible.

40)   Assign the dimensions (the text, leaders, witness
lines, etc.) the color yellow in such a way that the
color appears in index 13 of the DE section of the IGES
file.

41)   Assign the two circles and the cylinder's projection
line magenta in the isometric view and green in the top
view, making use of the "views visible, color, line
weight" entity (402 form 4) if possible. Make sure the
entities are not visible in the front or side views.

42)   Assign all model entities to level one, dimension
entities to level two, and the detailing entities
(dashed lines, crosshatching, centerlines, spline,
border lines, title block lines, and title block text)
to level three. This level information should appear
in the DE section field five of the outputted file.

43)   Use the "level function" entity (406 form 3) to
transfer the meaning of the levels in the sending
system.

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Incident Report

Incident Report

Attachment D

N-entity C-sized Plot

IGES entity symbol reference chart — Column 1 (top to bottom):

- CENTERLINE THRU CENTERS (106 FORM 21)
- CENTERLINE THRU POINTS (106 FORM 20)
- COORDINATE TRIPLES (106 FORM 2)
- LINEAR PLANAR CURVE (106 FORM 11)
- CONIC ARC – PARABOLA (104 FORM 3)
- CONIC ARC – HYPERBOLA (104 FORM 2)
- CONIC ARC – ELLIPSE (104 FORM 1)
- CONIC ARC – GENERAL (104 FORM 0)
- COMPOSITE CURVE (102)
- CIRCULAR ARC (100)

Column 2 (top to bottom):

- SIMPLE CLOSED AREA (106 FORM 63)
- WITNESS LINE (106 FORM 40)
- SECTION 38 (106 FORM 38)
- SECTION 37 (106 FORM 37)
- SECTION 36 (106 FORM 36)
- SECTION 35 (106 FORM 35)
- SECTION 34 (106 FORM 34)
- SECTION 33 (106 FORM 33)
- SECTION 32 (106 FORM 32)
- SECTION 31 (106 FORM 31)

Column 3 (top to bottom):

- TABULATED CYLINDER (122)
- SURFACE OF REVOLUTION (120)
- RULED SURFACE – PARAMETRIC (118 FORM 1)
- RULED SURFACE – ARC LENGTH (118 FORM 0)
- POINT (116)
- PARAMETRIC SPLINE SURFACE (114)
- PARAMETRIC SPLINE CURVE (112)
- LINE (110)
- BOUNDED PLANE (108 FORM 1)
- UNBOUNDED PLANE (108)

Column 4 (top to bottom):

- OFFSET CURVE (130)
- RBS GENERAL QUADRATIC (128 FORM 9)
- RBS TORUS (128 FORM 5)
- RBS SPHERE (128 FORM 4)
- RBS CONE (128 FORM 3)
- RBS RIGHT CIRC CYLINDER (128 FORM 2)
- RATIONAL B-SPLINE SURFACE (128 FORM 0)
- RATIONAL B-SPLINE CURVE (126 FORM 0)
- TRIMMED PARAMETRIC SURFACE (144)
- CURVE ON PARAMETRIC SURFACE (142)
- OFFSET SURFACE (140)
- TRANSFORMATION MATRIX 0=1 (124 FORM 1)
- TRANSFORMATION MATRIX 0=–1 (124 FORM 0)

Column 5 — Note graphics / entity 212 (examples shown: sSUPER, IM:≤2DED, DUAL STACK, SIMPLE, LABEL, SUPER SUB, SSUB):

- NOTE – SUPERSCRIPT (212 FORM 3)
- NOTE – IMBEDDED FONT CHANGE (212 FORM 2)
- NOTE – DUAL STACK (212 FORM 1)
- GENERAL NOTE – SIMPLE (212 FORM 0)
- GENERAL LABEL (210)
- DIAMETER DIMENSION (206)
- ANGULAR DIMENSION (202)
- NOTE – MULTI STACK RIGHT JUST (212 FORM 8)
- NOTE – MULTI STACK CENT JUST (212 FORM 7)
- NOTE – MULTI STACK LEFT JUST (212 FORM 6)
- NOTE – SUPER/SUB SCRIPT (212 FORM 5)
- NOTE – SUBSCRIPT (212 FORM 4)

Column 6 — Note fraction graphics / entity 212:

- NOTE – SUPER/SUB FRACTION (212 FORM 105)
- NOTE – FONT/DOUBLE FRACTION (212 FORM 102)
- NOTE – DUAL STACK FRACTION (212 FORM 101)
- NOTE – SIMPLE FRACTION (212 FORM 100)

Column 7 — Leaders (entity 214):

- LEADER – WEDGE (214 FORM 1)
- LEADER – INTEGRAL SIGN (214 FORM 10)
- LEADER – SLASH (214 FORM 9)
- LEADER – FILLED RECTANGLE (214 FORM 8)
- LEADER – RECTANGLE (214 FORM 7)
- LEADER – FILLED CIRCLE (214 FORM 6)
- LEADER – CIRCLE (214 FORM 5)
- LEADER – NO ARROW (214 FORM 4)
- LEADER – FILLED TRIANGLE (214 FORM 3)
- LEADER – TRIANGLE (214 FORM 2)

Column 8 — Leaders, symbols, dimensions:

- LEADER – OPEN TRIANGLE (214 FORM 11)
- SECTIONED AREA (230)
- SYMBOL – FEATURE CONTROL (228 FORM 3) [⊥.02]
- SYMBOL – DATUM TARGET (228 FORM 2) [A2]
- SYMBOL – DATUM FEATURE (228 FORM 1) [-C-]
- SYMBOL – GENERAL (228 FORM 0) [AB]
- RADIUS DIMENSION (222) [R .500]
- POINT DIMENSION (220) [.000]
- ORDINATE DIMENSION (218) [.750 / .000]
- LINEAR DIMENSION (216) [1.000]

Top-right box:

CALS TEST NETWORK
MIL-D-28000
CLASS II
REFERENCE DRAWING
N-ENTITY

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Attachment E

L-bracket C-sized Plot

Ø.500

2.000

R .100

.750

1.000
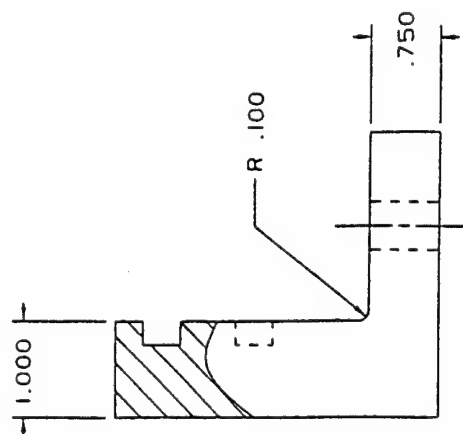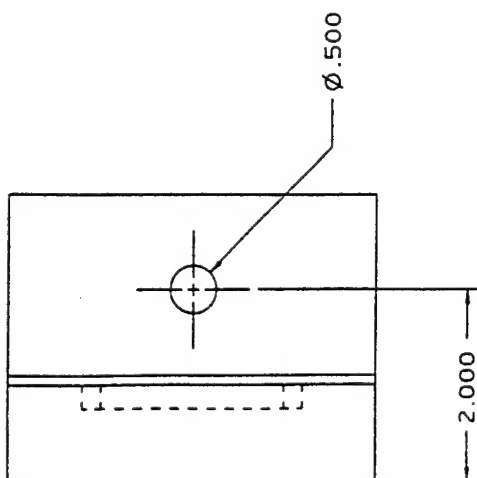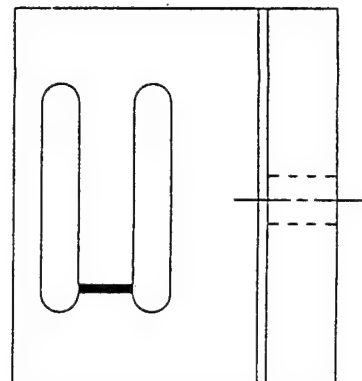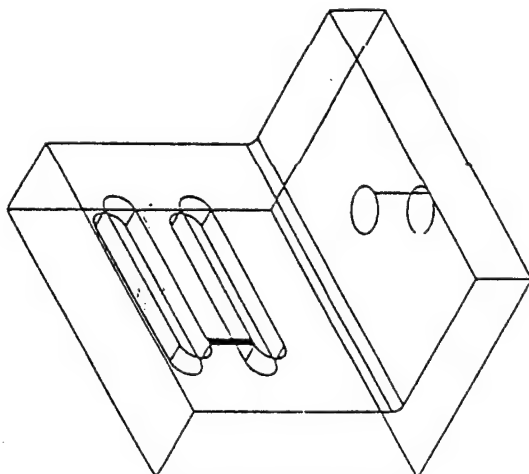
Attachment F

Procedures for Executing the CTN Reference Drawing
IGES Post-processor Test

Procedures for Executing the CTN Reference Drawing
IGES Post-processor Test

1. Receive a 9-track, MIL-STD-1840A formatted tape from the CALS Test Network containing both the N-entity and L-bracket IGES files in MIL-D-28000 Class II format.

2. Read the MIL-STD-1840A declaration information and load the IGES files onto your CAD system storage. The file names are shown in the 1840A declaration files and header fields.

3. Read and, if needed, strip the MIL-STD-1840A headers from the IGES files.

4. Post-process the IGES files into your CAD system, noting all errors the system reports. Call the CAD parts the same names as the file names.

5. Inspect the resulting models and answer the questions listed in the evaluation scripts. If you answer "no" to any of the questions, explain why on the incident report sheets which follow the script. Attach additional sheets if necessary.

6. Generate a hard copy plot of each drawing.

7. If you are conducting a self-test, collect the evaluation scripts, plots, and any incident reports for evaluation. If you pre-arranged a formal CTN test and obtained CTN approval, send the completed evaluation scripts, plots, and any incident reports to the CALS Test Network.

8. Evaluate the data. The CALS Test Network will and anyone conducting a self-test should:

    a. Examine the incident reports, plots, and evaluation scripts.
    b. Pinpoint processor, IGES standard, and/or military standard inefficiencies.
    c. Bring the findings to the appropriate parties for correction (either vendor, CAD system operator, IGES Committee, or the military standard's sponsor).
    d. On CTN-arranged tests, the CTN will publicly publish results of findings.

Attachment G

N-entity Evaluation Script

Answer the following questions:

100)
_____ a) Is the circular arc centered at (2,15,0)?
_____ b) Is the arc radius 0.5 inches?
_____ c) Is the arc traced out from 270 to 180 degrees
counterclockwise?

102)
_____ a) Is the composite curve made up of a point, line,
circular arc, and spline?
_____ b) Is the point at (3.5,15,0)?
_____ c) Does the line extend from (3.5,15,0) to (3.5,15.5,0)?
_____ d) Is the arc centered at (3.5,15,0) with a radius of 0.5
inches and traced out from 0 to 90 degrees
counterclockwise?
_____ e) Does the spline curve between the endpoints (4,15,0)
and (4.75,14.75,0)?
_____ f) Does the composite curve arc as a single entity
(selectable by one touch)?

104 Form 0)
_____ a) Is the general conic arc an ellipse centered at
(6,15,0)?
_____ b) Is the major axis 1.0 inches?
_____ c) Is the minor axis 0.5 inches?
_____ d) Is the ellipse positioned so that the long axis
parallels the vertical axis (is the ellipse skinny and
tall)?

104 Form 1)
_____ a) Is the ellipse centered at (8,15,0)?
_____ b) Is the major axis 1.0 inches?
_____ c) Is the minor axis 0.5 inches?
_____ d) Is the ellipse positioned so that the long axis
parallels the horizontal axis (is the ellipse short and
fat)?

104 Form 2)
_____ a) Is the hyperbola a horizontal hyperbola (shaped like a
backwards "C")?
_____ b) Is the right most part of the hyperbola at (10,15,0)?
_____ c) Do the ends of the hyperbola extend toward the negative
x-direction 0.25 inches?

104 Form 3)
_____ a) Is the parabola a vertical parabola (shaped like a wide
"U")?
_____ b) Is the parabola's vertex (lowest point) at (12,15,0)?

SUPER

1.000

IMBEDDED

DUAL STACK

SIMPLE

LABEL

S FRAC STION

M STACK RIGHT

M STACK CENTER

M STACK LEFT

S SUPER SUB

S SUB

SECTIONED AREA

Ø.500

45.00°

R .500

.000

.750

.000

1.000

AB

-C-

A2

.02

TOWARD OBSERVER

_____ c) Do the ends of the parabola extend 0.25 inches into the positive y-direction?

106 Form 11)
_____ a) Does the linear planar curve look like a circular arc of radius 0.5 inches, centered at (14,14.75,0) and traced out from 0 to 180 degrees counterclockwise?
_____ b) Is the linear planar curve made up of short straight segments combined to form a single entity?

106 Form 12)
_____ Does this three-segmented line stretch between (15.5,14.5,0), (15.75,15,1), (16,14.75,2), and (16.5,15.5,3)?

106 Form 20)
_____ a) Are two points present at (18,15.25,0) and (18,14.75,0)?
_____ b) Does a horizontal centerline extend between the approximate locations (18,15.4,0) and (18,14.6,0)? A centerline is a line of alternating short and long dashed segments.

106 Form 21)
_____ a) Is a circle centered at (20,15,0) with a radius of 0.5 inches?
_____ b) Are crosshairs present through the circle's center?
_____ c) Does the horizontal crosshair extend from approximately (20.6,15,0) to (19.4,15,0)?
_____ d) Does the vertical crosshair extend from approximately (20,15.6,0) to (20,14.4,0)?
_____ e) Do these crosshairs act together as one entity (both selectable by one touch)?

106 Form 31)
_____ a) Is a square shaped polygon present?
_____ b) Is the polygon crosshatched with parallel line segments?
_____ c) Is the crosshatch spacing 0.2 inches and angle 45 degrees?
_____ d) Does the polygon act as a single entity (selectable by one touch)?
_____ d) Does the crosshatching act as a single entity (selectable by one touch)?

106 Form 32)
_____ a) Are two squares present, one smaller and within the other?
_____ b) Is the area between the inner and outer squares crosshatched with parallel line segments in pairs with a gap between the pairs?
_____ c) Is the pattern spacing 0.177 inches and angle 45 degrees?

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_____ d) Does the crosshatching act as a single entity (selectable by one touch)?

106 Form 33)
_____ a) Is a square present?
_____ b) Is the square crosshatched with an alternating pattern of a solid line and a set of collinear dash segments?
_____ c) Is the pattern spacing 0.167 inches and angle 45 degrees?
_____ d) Does the crosshatching act as a single entity (selectable by one touch)?

106 Form 34)
_____ a) Is a polygon present that is composed of two perpendicular line segments and a convex arc connecting the unattached ends of the line segments?
_____ b) Is the polygon crosshatched with parallel lines in quadruples with a gap between the groups?
_____ c) Is the pattern spacing 0.1 inches and angle 45 degrees?
_____ d) Does the crosshatching act as a single entity (selectable by one touch)?

106 Form 35)
_____ a) Is a square present?
_____ b) Is the square crosshatched with triples of parallel lines consisting of two solid lines and a set of collinear dash segments between them with a gap between triples?
_____ c) Is the pattern spacing 0.2 inches and angle 45 degrees?
_____ d) Does the crosshatching act as a single entity (selectable by one touch)?

106 Form 36)
_____ a) Is a polygon present that is composed of four lines and one concave arc closing the polygon?
_____ b) Is the polygon crosshatched with parallel sets of collinear dash segments?
_____ c) Is the pattern spacing 0.167 inches and angle 45 degrees?
_____ d) Does the crosshatching act as a single entity (selectable by one touch)?

106 Form 37)
_____ a) Is a square present?
_____ b) Is the square crosshatched with two perpendicular sets of parallel lines?
_____ c) Is the pattern spacing 0.177 inches and angle 45 degrees?
_____ d) Does the crosshatching act as a single entity (selectable by one touch)?

106 Form 38)
_____ a) Is a polygon present that is composed of four lines and a concave shaped spline closing the polygon?

_____ b) Is the polygon crosshatched with two perpendicular sets of lines with the principal set solid from edge to edge and the second set consisting of collinear dash segments alternating on the solid lines?

_____ c) Is the pattern spacing 0.167 inches and angle 45 degrees?

_____ d) Does the crosshatching act as a single entity (selectable by one touch)?

106 Form 40)

_____ a) Is the lower left corner of the letter "A" at (17.75,13.25,0)?

_____ b) Is "A"'s text height 0.5 and width 0.5 inches?

_____ c) Are points present at (17.5,13.5,0) and (17.5,12.5,0)?

_____ d) Does a linear dimension placed to the right of and below the letter "A" read "1.000"?

_____ e) Is the upper witness line of the linear dimension visible between the approximate points (17.6,13.5,0) to (17.75,13.5,0) and (18.25,13.5,0) to (18.6,13.5,0)? In other words, does the witness line blank out as it goes through the letter "A"?

_____ f) Is the lower witness line visible from approximately (17.6,12.5,0) to (18.6,12.5,0)?

_____ g) Does the entire linear dimension (witness lines, leaders, and text) act as a single entity?

106 Form 63)

_____ a) Is a rectangle present between the points (19.5,12.75,0), (19.5,13.5,0), (20.5,13.5,0), and (20.5,12.75,0)?

_____ b) Is this rectangle a closed area (can it be filled by a pattern)?

_____ c) Does this simple closed area act as a single entity (selectable by one touch)?

108 Form 0)

_____ a) Is there a view present that is clipped by the planes x = 1, x = 3, y = 10, and y = 11.5?

_____ b) Is the view named "B"?

_____ c) Are the two lines from (1.5,11,0) to (2,11.75,0) and from (2.5,11,0) to (2,11.75,0) present?

_____ d) Are these lines clipped, therefore visible only between y = 11 and y = 11.5?

108 Form 1)

_____ Is there a plane defined at z = 0 that is bounded by a simple closed area (a square shaped figure) connecting the points (3.5,10.5,0), (4.5,10.5,0), (4.5,11.5,0), and (3.5,11.5,0)?

110)

_____ Is a line present from (6,11.5,0) to (6,10.5,0)?

112)

_____ Does the spline start at the upper left near
(7.5,11.5,0), trace out toward the lower right, move
toward the lower left to create a loop, and cross back
over itself as it moves to the upper right near
(8.5,11.5,0)? In other words, does the parametric
spline curve visually resemble the spline on the N-
entity plot?

114)

_____ a) Did two parametric splines appear, one 0.75 inches in
the y-direction and 1.0 inches in the z-direction above
the other?

_____ b) Is the area between the splines surfaced with a
parametric spline surface?

_____ c) Does the parametric spline surface visually resemble
the surface on the N-entity plot?

116)

_____ Is the point at (12,11,0)?

118 Form 0)

_____ a) Does a line extend from (13.5,11.5,0) to (13.5,10.5,0)?

_____ b) Is there a circular arc present through the points
(14.5,11.5,0), (14.25,11,0), and (14.5,10.5,0)?

_____ c) Is the area between the arc and the line surfaced with
a ruled surface of equal relative arc length?

_____ d) Does the surface visually resemble the plot?

118 Form 1)

_____ a) Does a line extend from (15.5,11.5,0) to (15.5,10.5,0)?

_____ b) Is there a circular arc present through the points
(16.5,11.5,0), (16.25,11,0), and (16.5,10.5,0)?

_____ c) Is the area between the arc and the line surfaced with
a ruled surface of equal relative parametric values?

_____ d) Does the surface visually resemble the plot?

120)

_____ a) Does a line extend from (18,11.75,0) to (18,10.5,0)?

_____ b) Is there an arc present through (18.5,11.5,0),
(18.25,11.125,0), and (18.5,10.75,0)?

_____ c) Is the arc revolved 360 degrees around the line to
create a surface of revolution?

_____ d) Does the surface visually resemble the plot?

122)

_____ a) Does a line extend from (19.75,10.75,0) to (20,11,-1)?

_____ b) Is there an arc present through (19.75,11,0),
(20,11.25,0), and (20.25,11,0)?

_____ c) Is the arc projected 1 inch into the negative z-
direction along the vector path of the line to create a
tabulated cylinder.

_____ d) Does the cylinder visually resemble the plot?

124 Form 0)

a) Did an arrow shaped figure appear?
b) Does this arrow act as a subfigure (selectable by one touch)?
c) Is the subfigure named "ARROW"?
d) Does the arrow point left with the arrowhead tip at (1.5,9,0)?

124 Form 1)
a) Did an arrow shaped figure appear?
b) Does this arrow act as a subfigure (selectable by one touch)?
c) Is the subfigure named "ARROW"?
d) Does the arrow point right with the arrowhead tip at (4.5,9,0)?

126 Form 0)
a) Does a rational b-spline curve pass through the points (5.5,9,0), (5.75,9.25,0), (6.25,9,0), and (6.5,9,0)?
b) Is the rational b-spline curve of degree 5?
c) Does the rational b-spline curve visually resemble the curve on the N-entity plot?

128 Form 0)
a) Did two rational b-splines appear, one 0.75 inches in the y-direction and 1.0 inches in the z-direction above the other?
b) Are the splines of degree 5?
c) Is the area between the splines surfaced with a rational b-spline surface?
d) Is the surface of degree 5?
e) Does the rational b-spline surface visually resemble the RBS surface on the plot?

128 Form 2)
a) Did two rational b-spline appear, both circular in shape and one positioned above the other?
b) Are the splines of degree 7?
c) Is the area between the splines surfaced with a rational b-spline right circular cylinder?
d) Is the surface of degree 7?
e) Does the rational b-spline right circular cylinder visually resemble the RBS right circular cylinder on the plot?

128 Form 3)
a) Did two rational b-splines appear, both circular in shape, but one both above and smaller that the other?
b) Are the splines of degree 7?
c) Is the area between the splines surfaced with a rational b-spline cone?
d) Is the surface of degree 7?
e) Does the rational b-spline cone visually resemble the plot?

128 Form 4)
_____ a) Is a line present from (14,8.5,0) to (14,9.75,0)?
_____ b) Is a sphere shaped rational b-spline surface present?
_____ c) Is the surface of degree 5?
_____ d) Does the rational b-spline sphere visually resemble the RBS sphere on the plot?

128 Form 5)
_____ a) Is a line present from (16,9.5,0) to (16,8.5,0)?
_____ b) Is a torus or donut shaped rational b-spline surface present?
_____ c) Is the surface of degree 5?
_____ d) Does the rational b-spline torus visually resemble the RBS torus on the plot?

128 Form 9)
_____ a) Did two rational b-splines appear, one 0.75 inches in the y-direction and 1.0 inches in the z-direction above the other?
_____ b) Are the splines of degree 2?
_____ c) Is the area between the splines surfaced with a rational b-spline general quadratic surface?
_____ d) Is the surface of degree 2?
_____ e) Does the rational b-spline general quadratic surface visually resemble the RBS surface on the plot?

130)
_____ a) Is there a circular arc present through the points (19.5,8.75,0), (20,9.25,0), and (20.5,8.75,0)?
_____ b) Did a second circular arc appear?
_____ c) Is this second circular arc smaller by 0.25 inches in radius than the first arc?
_____ d) Is this second arc traced out from 0 to 180 degrees counterclockwise like the first?
_____ e) Is the second circular arc an offset of the first?

140)
_____ a) Is the ruled surface present that extends between the line from (1.5,7.44,0.34) to (1.5,6.5,0) and the arc that connects (2.5,7.44,0.34), (2.125,6.97,0.17), and (2.5,6.5,0)?
_____ b) Did a second surface appear, one that looks exactly like the first surface?
_____ c) Is this second surface an offset surface.
_____ d) Is this second surface offset by 1.0 inch into the screen?

142)
_____ a) Did two parametric splines appear, one 0.75 inches in the y-direction and 1.0 inches in the z-direction above the other?
_____ b) Is the area between the splines surfaced with a parametric spline surface?

_____ c) Did a spline appear on the surface to represent a circle projected upon this parametric spline surface?

_____ d) The projected circle should not appear; is it blanked?

144)

_____ a) Did two parametric splines appear, one 0.75 inches in the y-direction and 1.0 inches in the z-direction above the other?

_____ b) Is the area between the splines surfaced with a parametric spline surface?

_____ c) Did a spline appear on the surface to represent a circle projected upon this parametric spline surface?

_____ d) The projected circle should not appear; is it blanked?

_____ e) Is the parametric spline surface trimmed back to and enclosed in the spline?

202)

_____ a) Is a line present from (7.5,7,0) to (7.25,6.75,0)?

_____ b) Is a line present from (7.25,6.75,0) to (7.5,6.75,0)?

_____ c) Is the angle that these two lines create dimensioned with an angular dimension?

_____ d) Is the angular dimension composed of two witness lines, two leader arrows, and a text block?

_____ e) Do the two witness lines, two leaders, and text block act as a single entity (selectable by one touch)?

_____ f) Does the text say "45.00°"?

_____ g) Is the lower left corner of the text block approximately at (7.9,7.1,0)?

_____ h) Is the text height 0.156 inches?

_____ i) Are the arrowheads the IGES-defined triangle types?

_____ j) Do both arrows point from the text toward the witness lines?

_____ k) Do the two witness lines extend from approximately (7.6,7.1,0) to (8.2,7.7,0) and from (7.6,6.75,0) to (8.6,6.75,0)?

206)

_____ a) Is a circle of diameter 0.5 present and centered at (9.5,7,0)?

_____ b) Is the circle dimensioned with a diameter dimension?

_____ c) Is the diameter dimension composed of two leader arrows and a text block?

_____ d) Do the two leaders and the text block act as a single entity (selectable by one touch)?

_____ e) Does the text say "ϕ.500"?

_____ f) Is the lower left corner of the text block approximately at (9.9,7.3,0)?

_____ g) Is the text height 0.156 inches?

_____ h) Are the arrowheads the IGES-defined triangle types?

_____ i) Do both arrowheads point toward the inside of the circle?

_____ j) Are the arrowheads 0.15 inches high and 0.05 inches wide?

210)
_____ a) Is a point present at (11.5,6.75,0)?
_____ b) Is this point labeled?
_____ c) Is the label composed of a leader and a text block?
_____ d) Do the leader and the text block act as a single entity (selectable by one touch)?
_____ e) Does the text block say "LABEL"?
_____ f) Is the lower left corner of the text block at (11.8,7.2,0)?
_____ g) Is the text height 0.156 inches?
_____ h) Is the leader a two-segmented leader?
_____ i) Is the leader's arrowhead at (11.5,6.75,0), first segment end at approximately (11.46,7.25,0), and second segment end at (11.75,7.25,0)?
_____ j) Is the arrowhead the IGES-defined triangle type?

212 Form 0)
_____ a) Does the lower left corner of the horizontal text block "SIMPLE" reside at (13.5,7.125,0)?
_____ b) Does a second text string also say "SIMPLE"?
_____ c) Is this second text string in the vertical orientation?
_____ d) Are the letters of this second text string slanted 30 degrees clockwise from the vertical axis?
_____ e) Is the lower left corner of the letter "S" at (14.5,7.5,0)?
_____ f) Is the text height for both text strings 0.125 inches?

212 Form 1)
_____ a) Does the text say "DUAL STACK"?
_____ b) Is the lower left corner of the text "DUAL" at (15.5,7.125,0)?
_____ c) Is the text "STACK" left justified directly below "DUAL"?
_____ d) Is the text height 0.125 inches?

212 Form 2)
_____ a) Do the first and second letters say "IM" and the sixth through eighth say "DED"?
_____ b) Do the third through the fifth letters say "$\div \Delta \geq$"?
_____ c) Is the lower left corner of the text block at (17.5,7.125,0)?
_____ d) Is the text height 0.125 inches?

212 Form 3)
_____ a) Are the words of the general note "S" and "SUPER"?
_____ b) Is the word "SUPER" a superscript of the letter "S"?
_____ c) Is the lower left corner of the letter "S" at (19.5,7.125,0)?
_____ d) Is the text height 0.125 inches?

212 Form 4)
_____ a) Are the words of the general note "S" and "SUB"?
_____ b) Is the word "SUB" a subscript of the letter "S"?

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_____ c) Is the lower left corner of the letter "S" at
          (1.5,5.125,0)?
_____ d) Is the text height 0.125 inches?

212 Form 5)
_____ a) Are the words of the general note "S", "SUPER", and
          "SUB"?
_____ b) Is the word "SUPER" a superscript of "S"?
_____ c) Is the word "SUB" a subscript of "S"?
_____ d) Is the lower left corner of the letter "S" at
          (3.5,5.125,0)?
_____ e) Is the text height 0.125 inches?

212 Form 6)
_____ a) Are the words of the general note "M", "STACK", and
          "LEFT"?
_____ b) Are the words stacked one below the other ("M" then
          "STACK" then "LEFT")?
_____ c) Are the words left justified to a common margin?
_____ d) Is the lower left corner of the letter "M" at
          (5.5,5.25,0)?
_____ e) Is the text height 0.125 inches?

212 Form 7)
_____ a) Are the words of the general note "M", "STACK", and
          "CENTER"?
_____ b) Are the words stacked one below the other?
_____ c) Are the words center justified?
_____ d) Is the lower center location of the letter "M" at
          (8,5.25,0)?
_____ e) Is the text height 0.125 inches?

212 Form 8)
_____ a) Are the words of the general note "M", "STACK", and
          "RIGHT"?
_____ b) Are the words stacked one below the other?
_____ c) Are the words right justified to a common margin?
_____ d) Is the lower right corner of the letter "M" at
          (10.5,5.25,0)?
_____ e) Is the text height 0.125 inches?

212 Form 100)
_____ a) Are the words "S", "----", "FRAC", and "TION" present?
_____ b) Is the lower left corner of the letter "S" at
          approximately (11.5,5.1,0)?
_____ c) Do the four dashes follow, after one space, the letter
          "S"?
_____ d) Does the text "FRAC" appear to be a superscript of "S"?
_____ e) Is "FRAC" located directly above the dashes?
_____ f) Does the text "TION" appear to be a subscript of "S"?
_____ g) Is "TION" located directly below the dashes?

212 Form 101)
_____ a) Are the words "DUAL", "---", "TO", "P", "STACK",

"-----", "BOT", and "TOM" present?
_____ b) Is the lower left corner of "DUAL" at approximately (13.5,5.3,0)?
_____ c) Do the three dashes follow, after two spaces, the word "DUAL"?
_____ d) Does the text "TO" appear to be a superscript of "DUAL"?
_____ e) Is "TO" located directly above the dashes?
_____ f) Does the text "P" appear to be a subscript of "DUAL"?
_____ g) Is "P" located directly below the dashes?
_____ h) Is the word "STACK" roughly three lines below and left justified to "DUAL"?
_____ i) Do the five dashes follow, after one space, the word "STACK"?
_____ j) Does the text "BOT" appear to be a superscript of "STACK"?
_____ k) Is "BOT" located directly above the dashes?
_____ l) Does the text "TOM" appear to be a subscript of "STACK"?
_____ m) Is "TOM" located directly below the dashes?
_____ n) Is the text height 0.125 inches?

212 Form 102)
_____ a) Are the words "IM", "-----", "BED", "DED", "≠", "FR", "----", "ACT", and "ION" present?
_____ b) Is the lower left corner of "IM" at approximately (15.1,5.1,0)?
_____ c) Do the five dashes follow, after one space, the text string "IM"?
_____ d) Does the text "BED" appear to be a superscript of "IM"?
_____ e) Is "BED" located directly above the dashes?
_____ f) Does the text "DED" appear to be a subscript of "IM"?
_____ g) Is "DED" located directly below the dashes?
_____ h) Is there a space after the fifth dash and then the character "≠"?
_____ i) Is there a space after "≠" and then the text "FR"?
_____ j) Do the four dashes follow, after one space, the text "FR"?
_____ k) Does the text "ACT" appear to be a superscript of "FR"?
_____ l) Is "ACT" located directly above the dashes?
_____ m) Does the text "ION" appear to be a subscript of "FR"?
_____ n) Is "ION" located directly below the dashes?
_____ o) Is the text height 0.125 inches?

212 Form 105)
_____ a) Are the words "FR", "-----", "SUP", "SUB", "T", "---", "O", "P", "BO", "----", "TT", "OM" present?
_____ b) Is the lower left corner of "FR" at approximately (17.1,5.1,0)?
_____ c) Do the five dashes follow, after one space, the text "FR"?
_____ d) Does the text "SUP" appear to be a superscript of "FR"?
_____ e) Is "SUP" located directly above the dashes?
_____ f) Does the text "SUB" appear to be a subscript of "FR"?

60

_____ g) Is "SUB" located directly below the dashes?
_____ h) Does the letter "T" appear to be a superscript of the entire first fraction?
_____ i) Do the three dashes follow, after one space, the letter "T"?
_____ j) Does "O" appear to be a superscript to "T"?
_____ k) Is "O" located directly above the dashes?
_____ l) Does "P" appear to be a subscript to "T"?
_____ m) Is "P" located directly below the dashes?
_____ n) Does "BO" appear to be a subscript of the entire first fraction?
_____ o) Do the four dashes follow, after one space, the text "BO"?
_____ p) Does the text "TT" appear to be a superscript of "BO"?
_____ q) Is "TT" located directly above the dashes?
_____ r) Does the text "OM" appear to be a subscript of "BO"?
_____ s) Is "OM" located directly below the dashes?
_____ t) Is the text height 0.125 inches?

214 Form 1)
_____ a) Is the leader's tail at (20.5,5,0)?
_____ b) Is the leader's head at (19.5,5,0)?
_____ c) Is the arrowhead the IGES-defined wedge type?
_____ d) Is the arrowhead height 0.15 inches?
_____ e) Is the arrowhead width 0.05 inches?

214 Form 2)
_____ a) Is the leader's tail at (2.5,3,0)?
_____ b) Is the leader's head at (1.5,3,0)?
_____ c) Is the arrowhead the IGES-defined triangle type?
_____ d) Is the arrowhead height 0.15 inches?
_____ e) Is the arrowhead width 0.05 inches?

214 Form 3)
_____ a) Is the leader's tail at (4.5,3,0)?
_____ b) Is the leader's head at (3.5,3,0)?
_____ c) Is the arrowhead the IGES-defined filled triangle type?
_____ d) Is the arrowhead height 0.15 inches?
_____ e) Is the arrowhead width 0.05 inches?

214 Form 4)
_____ a) Is the leader's tail at (6.5,3,0)?
_____ b) Is the leader's head at (5.5,3,0)?
_____ c) Is there no arrowhead?

214 Form 5)
_____ a) Is the leader's tail at (8.5,3,0)?
_____ b) Is the leader's head at (7.5,3,0)?
_____ c) Is the arrowhead the IGES-defined circle type?
_____ d) Is the arrowhead height 0.1 inches?
_____ e) Is the arrowhead width 0.1 inches?

214 Form 6)
_____ a) Is the leader's tail at (10.5,3,0)?

_____ b) Is the leader's head at (9.5,3,0)?
_____ c) Is the arrowhead the IGES-defined filled circle type?
_____ d) Is the arrowhead height 0.1 inches?
_____ e) Is the arrowhead width 0.1 inches?

214 Form 7)
_____ a) Is the leader's tail at (12.5,3,0)?
_____ b) Is the leader's head at (11.5,3,0)?
_____ c) Is the arrowhead the IGES-defined rectangle type?
_____ d) Is the arrowhead height 0.1 inches?
_____ e) Is the arrowhead width 0.1 inches?

214 Form 8)
_____ a) Is the leader's tail at (14.5,3,0)?
_____ b) Is the leader's head at (13.5,3,0)?
_____ c) Is the arrowhead the IGES-defined filled rectangle
           type?
_____ d) Is the arrowhead height 0.1 inches?
_____ e) Is the arrowhead width 0.1 inches?

214 Form 9)
_____ a) Is the leader's tail at (16.5,3,0)?
_____ b) Is the leader's head at (15.5,3,0)?
_____ c) Is the arrowhead the IGES-defined slash type?
_____ d) Is the arrowhead height 0.1 inches?
_____ e) Is the arrowhead width 0.1 inches?

214 Form 10)
_____ a) Is the leader's tail at (18.5,3,0)?
_____ b) Is the leader's head at (17.5,3,0)?
_____ c) Is the arrowhead the IGES-defined integral sign type?
_____ d) Is the arrowhead height 0.1 inches?
_____ e) Is the arrowhead width 0.1 inches?

214 Form 11)
_____ a) Is the leader's tail at (20.5,3,0)?
_____ b) Is the leader's head at (19.5,3,0)?
_____ c) Is the arrowhead the IGES-defined open triangle type?
_____ d) Is the arrowhead height 0.15 inches?
_____ e) Is the arrowhead width 0.05 inches?

216)
_____ a) Are there two points present: one at (1.5,0.5,0) and
           one at (2.5,0.5,0)?
_____ b) Is the space between these two points dimensioned with
           a linear dimension?
_____ c) Is the linear dimension composed of two witness lines,
           two leader arrows, and a text block?
_____ d) Do the two witness lines, two leaders, and text block
           act as a single entity (selectable by one touch)?
_____ e) Does the text say "1.000"?
_____ f) Is the lower left corner of the text block
           approximately at (1.64,1.17,0)?
_____ g) Is the text height 0.156 inches?

62

_____ h) Are the arrowheads of the IGES-defined triangle type?
_____ i) Do both arrows point toward the text from the outside of the witness lines?

218)
_____ a) Are there two points present: one at (3.5,0.5,0) and one at (4.25,0.5,0)?
_____ b) Is the right point ordinately dimensioned from the left point?
_____ c) Is the ordinate dimension composed of two leaders and two text blocks?
_____ d) Do the two leaders and two text blocks act as a single entity (selectable by one touch)?
_____ e) Does the text above the left point say ".000"?
_____ f) Does the text above the right point say ".750"?
_____ g) Is the lower left corner of the left text block before rotation approximately at (3.58,1.19,0)?
_____ h) Is the lower left corner of the right text block before rotation approximately at (4.33,1.19,0)?
_____ i) Is the text height 0.156 inches?
_____ j) Are there no arrowheads on the leaders?
_____ k) Do the leaders extend from locations just above the points to the text blocks?

220)
_____ a) Is there a point present at (6,0.5,0)?
_____ b) Is this point dimensioned?
_____ c) Is the point dimension composed of one leader, one circle, and one text block?
_____ d) Do the leader, circle, and text block act as a single entity (selectable by one touch)?
_____ e) Does the text say ".000"?
_____ f) Is the lower left corner of the text block approximately at (5.73,1.33,0)?
_____ g) Is the text height 0.156 inches?
_____ h) Is there no arrowhead on the leader?
_____ i) Is the text surrounded by a circle?
_____ j) Does the leader extend from a location just above the point to the bottom of the circle?

222)
_____ a) Is a circular arc present centered at (7.25,0.5,0) with a radius of 0.5 inches and traced out from 0 to 90 degrees counterclockwise?
_____ b) Is this arc dimensioned with a radius dimension?
_____ c) Is this radius dimension composed of a leader and a text block?
_____ d) Do the leader and the text block act as a single entity (selectable by one touch)?
_____ d) Does the text block say "R .500"?
_____ e) Is the lower left corner of the text block at (7.85,1.42,0)?
_____ f) Is the text height 0.156 inches?
_____ g) Is the leader a two-segmented leader?

_____ h) Is the arrowhead of the IGES-defined triangle type?
_____ i) Does the arrowhead point toward the outside of the arc?

228 Form 0)
_____ a) Is a diamond shaped closed figure present?
_____ b) Does a line horizontally cut in half this diamond
          shaped figure?
_____ c) Does a piece of text saying "AB" occupy the lower half
          of this diamond shaped figure?
_____ d) Do the closed figure, line, and text block act as a
          single general symbol (all three entities selectable by
          one touch)?
_____ e) Is the lower left corner of the text block at
          (9.875,0.75,0)?
_____ f) Is the text height 0.156 inches?

228 Form 1)
_____ a) Is a rectangular shaped closed figure present?
_____ b) Is the text "-C-" present inside of the rectangle?
_____ c) Do the closed figure and the text act as a single datum
          feature symbol (both entities selectable by one touch)?
_____ d) Is the lower left corner of the text block at
          (11.83,1.08,0)?
_____ e) Is the text height 0.156 inches?

228 Form 2)
_____ a) Is a circle present?
_____ b) Does a line horizontally cut this circle in half?
_____ c) Does the text "A2" occupy the lower half of this
          circle?
_____ d) Is the lower left corner of the text block at
          (14.125,1,0)?
_____ e) Is the text height 0.156 inches?
_____ f) Does an arrow point from the lower left side of the
          circle to (13.625,0.625,0)?
_____ g) Do the circle, line, text, and arrow act as a single
          target symbol (all four entities selectable by one
          touch)?

228 Form 3)
_____ a) Is a rectangular frame present?
_____ b) Does a text block containing a perpendicular symbol, a
          frame divider, and the text ".02" occupy the
          rectangular frame?
_____ c) Is the lower left corner of the text block at
          (15.58,1.08,0)?
_____ d) Is the text height 0.156 inches?
_____ e) Do the rectangle and text act as a single feature
          control frame (selectable by one touch)?

230)
_____ a) Do four lines form a square?
_____ b) Is the square crosshatched with solid parallel line
          segments from edge to edge?

_____ c)   Is the crosshatching spacing 0.2 inches?
_____ d)   Is the crosshatching angled at 45 degrees?

Grid Lines)
_____ a)   Are there 11 vertical grid lines?
_____ b)   Are there 9 horizontal grid lines?

Entity Identifiers)
_____   Is every entity identified by a name and an IGES number
           placed beneath the entity within the grid box?

Title Block)
_____   Does the title block in the lower right hand grid box
           say,   "CALS TEST NETWORK
                        MIL-D-28000
                          CLASS II
                      REFERENCE DRAWING
                        N-ENTITY"?

Incident Report

Incident Report

Incident Report

Attachment H

L-bracket Evaluation Script

Answer the following questions:

Views)
_____ a) Is the lower left corner of the top view at the drawing location (3,10)?
_____ b) Is the lower left corner of the front view at the drawing location (3,3)?
_____ c) Is the lower left corner of the side view at the drawing location (12,3)?
_____ d) Is the lower left corner of the isometric view at the drawing location (12,10)?

Dimensions)
_____ a) Is the diameter dimension (φ.500) readable and does it point at the circle on the top view?
_____ b) Is the radius dimension (R .100) readable and does it point at the fillet on the front view?
_____ c) Is the linear dimension (2.000) readable and does it dimension the distance between the circle center and the left side of the l-bracket on the top view?
_____ d) Is the linear dimension (1.000) readable and does it dimension the width of the l-bracket's vertical leg on the front view?
_____ e) Is the linear dimension (.750) readable and does it dimension the width of the l-bracket's horizontal leg on the front view?

Dashed lines)
_____ a) On the top view, are the two horizontal hidden slot lines dashed that are labeled "J" on the A-sized, L-bracket plot attached to this script? Do the lines have 0.1 inch long dashes and 0.1 inch long spaces?
_____ b) On the top view, are the remaining three hidden slot lines (labeled by "E+G" and "F") dashed?
_____ c) If the answer to a) was yes, and if the answer to b) was no, blank the whole top view momentarily to clearly see the font of the "E+G" and "F" lines. Are they now dashed?
_____ d) On the front view, is the vertical hidden slot line dashed? Again, if the answer to a) was yes, blank the front view to clearly see the font of this line. Is it now dashed?
_____ e) On the front view, are the two horizontal hidden slot lines dashed. Do the lines have 0.1 inch long dashes and 0.1 inch long spaces? If they are not dashed, blank the whole front view to clearly see the font of these lines. Are they now dashed?
_____ f) On the front view, is the line representing the left side of the through-hole dashed?

Ø.500

2.000

R .100

.750

1.000

71
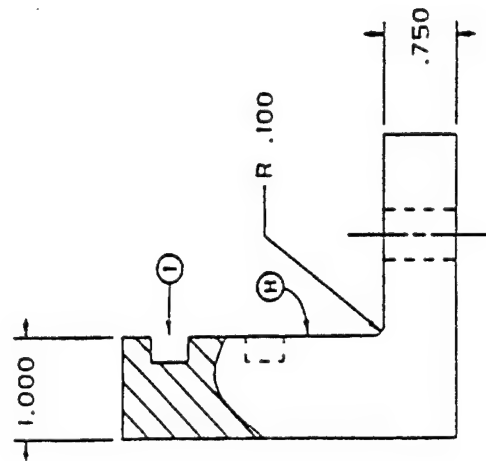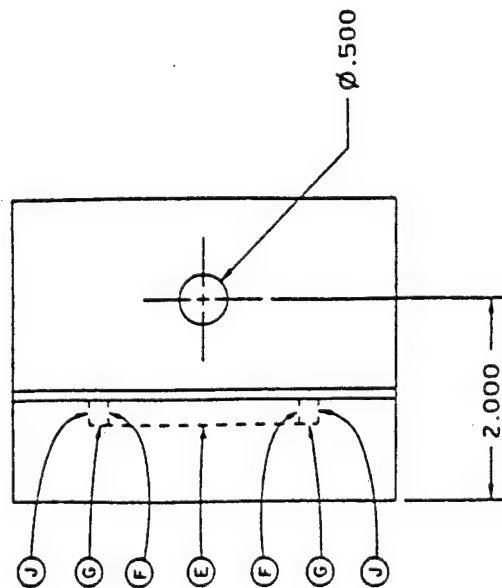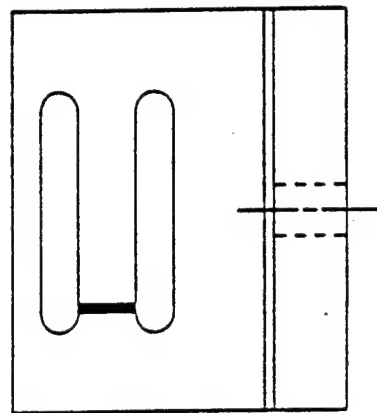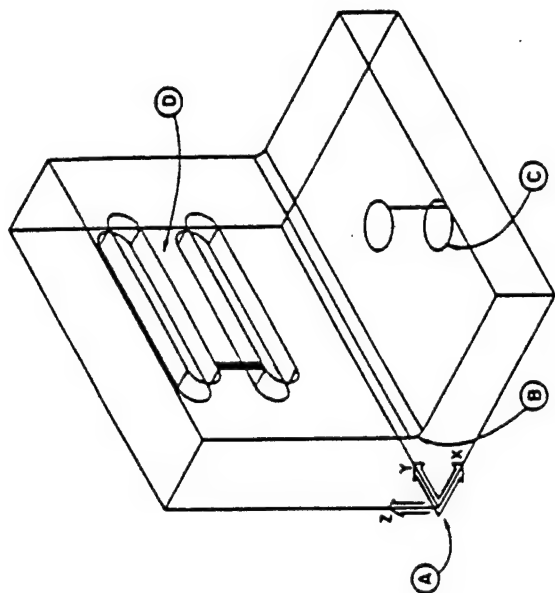
g) On the front view, is the line representing the right side of the through-hole dashed? If not, blank the view to clearly see the line font.

h) On the side view, are both lines representing both sides of the through-hole dashed?

Subfigure)

a) Does the lower slot act as a subfigure (e.g. selectable by one touch)?

b) Is the subfigure named "SUBFIG"?

Color)

a) Is the crosshatching close to the color of magenta?

b) Are all the dimensions yellow?

c) Are the two circles and the line which comprise the through-hole magenta in the isometric view?

d) Are the two circles and the line which comprise the through-hole green in the top view?

e) Are the rest of the entities the default color of the system?

Ordered group)

Does the upper slot act as an ordered group (e.g. the entire group selectable by one touch)?

Crosshatching)

Did crosshatching appear on the vertical leg of the l-bracket to depict the exposed interior of the l-bracket?

Centerlines)

a) Did a crosshair (one horizontal and one vertical centerline) appear on the circle in the top view?

b) Does this crosshair act as a single entity?

c) Did a centerline appear on the front view to depict the center of the through-hole?

d) Did a centerline appear on the side view to depict the center of the through-hole?

Level definitions)

a) Are all the model entities on level one?

b) Are all the dimension entities on level two?

c) Are all the other detailing entities (all dashed lines, crosshatching, centerlines, the spline, border lines, title block lines, and the title block text) on level three?

d) Is the lower slot (subfigure) on level four?

e) Is the definition of the levels apparent?

Views visible)

a) Is the cut-out pointed to by "I" really cut out as shown on the plot?

Spline)
_____   Did the parametric spline appear properly on the front
                  view exposing the interior of the l-bracket?

Line widening)
_____ a) Is the line connecting the two slots widened?
_____ b) Is it widened to 0.1 inch?
_____ c) Does the widened line have squared corners?
_____ d) Does the widened line not extent beyond the bottom line
            of the top slot and the top line of the bottom slot?

Border)
_____ a) Did the four lines bordering the drawing appear?
_____ b) Did the two lines bordering the title block appear?

Title block)
_____   Did the title block appear as centered text and read
                  "CALS TEST NETWORK
                       MIL-D-28000
                         CLASS II
                    REFERENCE DRAWING
                       L-BRACKET"?

Drawing)
_____ a) Is the drawing named "LBRACKT"?
_____ b) Are the drawing units in inches?
_____ c) Is the drawing C-sized?

General)
_____   Does the drawing look generally similar to the provided
                  L-bracket reference drawing plot?

Incident Report

Attachment I

N-entity IGES File Printout

CONFORMANCE: This IGES file comforms to the MIL-D-28000 Amendment 1
              Class II subset (Engineering Drawings).

CREATED BY: CALS Test Network
              Lawrence Livermore National Laboratory
              7000 East Ave., P.O. Box 808, L-542
              Livermore, CA 94550
              (415) 422-4357

DATE: 15 October 1988

PART NAME: NENTITY

DRAWING NAME: NENTITY

DESCRIPTION: Reference drawing named N-entity which is comprised of
              all the IGES geometric and annotion entities (100-230)
              specified in MIL-D-28000 Class II. Contact the CALS
              Test Network to obtain procedures for conducting the
              test and evaluating the results.

REVISION: C

DRAWING SIZE
AND NUMBER: One C-Size

PART LEVEL SCHEME:

LEVEL	COLOR	ENTITY DESCRIPTION	MODE
defaulted	not assigned	all entities	model

0	1	0	0	0	0
0	0	1	0	0	0
0	2	0	0	0	0
0	0	1	0	0	0
0	3	0	0	0	0
0	4	1	0	0	0
0	0	0	0	0	0
0	5	1	0	0	0
0	0	0	0	0	0
0	6	1	0	0	0
0	0	0	0	0	0
0	7	1	0	0	0
0	0	2	0	0	0
0	9	0	0	0	0

```
1H,,1H;,7HNENTITY,7HNENTITY,4HNONE,4HNONE,16,8,24,8,56,
7HNENTITY,1.0,1,4HINCH,1,1.0,13H881015.080000,0.000001,22.0,
7HFARRELL,17HCALS TEST NETWORK,6,0;
```

S	1
S	2
S	3
S	4
S	5
S	6
S	7
S	8
S	9
S	10
S	11
S	12
S	13
S	14
S	15
S	16
S	17
S	18
S	19
S	20
S	21
S	22
S	23
S	24
S	25
S	26
S	27
S	28
S	29
S	30
S	31
S	32
S	33
S	34
S	35
S	36
G	1
G	2
G	3
G	4
1D	1
D	2
1D	3
D	4
1D	5
D	6
1D	7
D	8
1D	9
D	10
1D	11
D	12
1D	13
D	14
1D	15

```
16  D
17  1D
18  D
19  1D
20  D
21  1D
22  D        10001D
23  D
24  1D       00001D
25  D
26  1D       10001D
27  D
28  1D       10001D
29  D
30  1D       10001D
31  D
32  1D       10001D
33  D
34  1D       20201D
35  D
36  1D
37  D
38  1D
39  D
40  1D
41  D
42  1D
43  D
44  1D
45  D
46  1D
47  D
48  1D
49  D
50  1D
51  D
52  1D
53  D
54  1D
55  D
56  1D
57  D
58  1D
59  D
60  1D
61  D
62  1D
63  D
64  1D
65  D
66  1D
67  D
68  1D
69  D
70  1D
```

Data listing (machine printout, rotated on page):

#	Type	(val)	A	B	C	D1	D2	0/5	col	col
71	1D		0	0	0	0	1	0	40	110
72	D					0	1	5	0	110
73	1D		0	0	0	0	1	0	41	110
74	D					0	1	5	0	110
75	1D		0	0	0	0	1	0	42	100
76	D	10001D	0	0	0	0	1	5	0	100
77	D					0	0	0	43	116
78	1D	10001D	0	0	0	0	1	5	0	116
79	D					0	1	0	44	110
80	D	10001D	0	0	0	0	1	5	0	100
81	1D		0	1045	0	0	1	0	45	100
82	D					0	0	5	0	124
83	1D		0	0	0	0	1	0	46	124
84	D					1	1	0	0	104
85	1D		0	83	0	0	2	0	47	104
86	D					0	0	5	0	116
87	1D		0	0	0	0	1	0	49	116
88	D					0	0	5	0	116
89	1D		0	0	0	0	1	0	50	100
90	D					0	1	5	0	100
91	1D		0	0	0	0	1	0	51	0
92	D					0	1	5	0	0
93	1D		0	0	0	0	1	0	52	110
94	D					0	1	5	0	110
95	1D		0	0	0	0	1	0	53	110
96	D					0	1	5	0	110
97	1D		0	0	0	0	1	0	54	110
98	D					0	1	5	0	110
99	1D		0	0	0	0	1	0	55	110
100	D					0	1	5	0	110
101	1D		0	0	0	0	1	0	56	110
102	D					0	1	5	0	110
103	1D		0	0	0	0	1	0	57	110
104	D					0	1	5	0	110
105	1D		0	0	0	0	1	0	58	110
106	D					0	1	5	0	110
107	1D		0	0	0	0	1	0	59	110
108	D					0	1	5	0	110
109	1D		0	0	0	0	1	0	60	110
110	D					0	1	5	0	110
111	1D		0	0	0	0	1	0	61	110
112	D					0	1	5	0	110
113	1D		0	0	0	0	1	0	62	110
114	D					0	1	5	0	110
115	1D		0	0	0	0	1	0	63	110
116	D					0	1	5	0	110
117	1D		0	0	0	0	1	0	64	110
118	D					0	1	5	0	110
119	1D		0	0	0	0	1	0	65	110
120	D					0	1	5	0	110
121	1D		0	0	0	0	1	0	66	110
122	D					0	1	5	0	110
123	1D		0	0	0	0	1	0	67	110
124	D					0	1	5	0	110
125	1D		0	0	0	0	1	0	68	110

n	code						5/0		
126	D	0	0	0	0	1	5	0	110
127	1D				0	1	0	69	110
128	D	0	0	0	0	1	5	0	110
129	1D				0	1	0	70	110
130	D	0	0	0	0	1	5	0	110
131	1D				0	1	0	71	110
132	D	0	0	0	0	1	5	0	110
133	1D				0	1	0	72	110
134	D	0	0	0	0	1	5	0	110
135	1D				0	1	0	73	110
136	D	0	0	0	0	1	5	0	110
137	1D				0	1	0	74	110
138	D	0	0	0	0	1	5	0	110
139	1D				0	1	0	75	110
140	D	0	0	0	0	1	5	0	110
141	1D				0	1	0	76	110
142	D	0	0	0	0	1	5	0	110
143	1D				0	1	0	77	110
144	D	0	0	0	0	1	5	0	110
145	1D				0	1	0	78	110
146	D	0	0	0	0	1	5	0	110
147	1D				0	1	0	79	110
148	D	0	0	0	0	1	5	0	110
149	1D				0	1	0	80	110
150	D	0	0	0	0	1	5	0	100
151	1D				0	1	0	81	100
152	D	0	0	0	0	1	5	0	100
153	1D				0	1	0	82	100
154	D	0	0	0	0	1	5	0	106
155	1D				0	1	0	83	106
156	D	0	0	0	0	1	5	0	106
157	1D				0	1	0	84	106
158	D	0	0	0	0	1	5	0	0
159	101D				21	0	0	85	0
160	D	0	0	0	0	2	5	0	116
161	101D				20	0	0	87	116
162	D	0	0	0	0	2	5	0	116
163	101D				0	0	0	89	106
164	D	0	0	0	0	2	5	0	106
165	1D				0	0	0	91	108
166	D	0	0	0	0	1	5	0	108
167	1D				0	0	0	92	110
168	20001D	0	0	0	63	1	5	0	116
169	D				1	1	0	93	116
170	1D	0	0	0	0	1	5	0	110
171	D				0	1	0	94	110
172	1D	0	0	0	0	1	5	0	110
173	D				0	1	0	95	110
174	1D	0	0	0	0	1	5	0	110
175	D				0	1	0	96	110
176	20001D	0	0	0	0	1	5	0	110
177	D				0	1	0	97	110
178	20001D	0	0	0	0	1	5	0	110
179	D				0	1	0	98	110
180	20001D	0	0	0	0	1	5	0	110

#									
181	20001D	0	0	0	0	1	0	99	110
182	D				0	1	5	0	110
183	20001D	0	0	0	0	1	0	100	110
184	D				0	1	5	0	110
185	1D	0	0	0	0	1	0	101	100
186	D				0	0	5	0	100
187	1D	0	0	0	0	1	0	102	116
188	D				0	0	5	0	116
189	1D	0	0	0	0	1	0	103	116
190	D				0	0	5	0	116
191	1D	0	0	0	0	1	0	104	116
192	D				0	0	5	0	116
193	1D	0	0	0	0	1	0	105	110
194	D				0	1	5	0	110
195	1D	0	0	0	0	1	0	106	214
196	D				7	1	5	0	214
197	101D	0	0	0	11	1	0	107	214
198	D				0	1	5	0	214
199	101D	0	0	0	0	0	0	108	116
200	D				0	1	5	0	116
201	1D	0	0	0	0	1	0	109	100
202	D				0	1	5	0	100
203	1D	0	0	0	0	1	0	110	110
204	D				0	1	5	0	110
205	1D	0	0	0	0	1	0	111	100
206	D				0	1	5	0	100
207	10101D	0	0	0	0	6	0	112	110
208	D				0	1	5	0	0
209	10101D	0	0	0	0	1	0	113	0
210	D				0	1	5	0	0
211	101D	0	0	0	0	1	0	114	0
212	D				0	1	5	0	0
213	1D	0	0	0	0	1	0	115	0
214	D				0	1	5	0	0
215	1D	0	0	0	0	1	0	116	0
216	D				0	1	5	0	0
217	1D	0	0	0	0	1	0	117	0
218	D				0	1	5	0	0
219	1D	0	0	0	0	1	0	118	110
220	D				0	1	5	0	110
221	10101D	0	0	0	0	1	0	119	0
222	D				0	1	5	0	0
223	1D	0	0	0	0	2	0	120	0
224	D				0	1	5	0	0
225	1D	0	0	0	0	2	0	121	0
226	D				0	1	5	0	0
227	1D	0	0	0	0	1	0	122	0
228	D				0	1	5	0	0
229	1D	0	0	0	0	1	0	123	0
230	D				0	1	5	0	0
231	1D	0	0	0	0	1	0	124	0
232	D				0	1	5	0	0
233	1D	0	0	0	0	1	0	125	0
234	D				0	1	5	0	0
235	1D	0	0	0	0	1	0	126	0

Row	Type							
236	D	0	0	0	0	1	5	0
237	1D				0	1	0	127
238	D	0	0	0	0	1	5	0
239	1D				0	0	0	128
240	D	0	0	0	0	1	5	0
241	1D				0	1	0	129
242	D	0	0	0	0	1	5	0
243	1D				0	1	0	130
244	D	0	0	0	0	1	5	0
245	1D				0	1	1	131
246	D	0	0	0	0	1	5	0
247	1D				0	1	1	132
248	D	0	0	0	0	1	5	0
249	1D				0	1	1	133
250	D	0	0	0	0	1	5	0
251	1D				0	1	1	134
252	D	0	0	0	0	1	5	0
253	1D				0	1	1	135
254	D	0	0	0	0	1	5	0
255	1D		255		0	0	0	136
256	D	0	0	0	0	1	5	0
257	1D				0	1	0	137
258	D	0	0	0	0	2	0	0
259	1D		259		0	0	0	139
260	D	0	0	0	0	2	0	0
261	1D				3	1	5	141
262	D	0	0	0	0	0	0	0
263	1D		263		0	2	0	142
264	D	0	0	0	0	1	5	0
265	1D				2	1	0	144
266	D	0	0	0	0	1	5	0
267	1D				0	1	0	146
268	D	0	0	0	200001D	1	5	0
269	1D				0	1	0	147
270	D	0	0	0	0	1	5	0
271	1D				0	1	1	148
272	D	0	0	0	0	1	5	0
273	1D				0	1	1	149
274	D	0	0	0	0	1	5	0
275	1D				0	1	1	150
276	D	0	0	0	0	1	5	0
277	1D				0	1	1	151
278	D	0	0	0	0	1	5	0
279	1D				0	1	1	152
280	D	0	0	0	0	1	5	0
281	1D				0	1	1	153
282	D	0	0	0	0	1	5	0
283	1D				0	1	1	154
284	D	0	0	0	0	1	5	0
285	1D				0	1	1	155
286	D	0	0	0	0	1	0	0
287	1D				12	1	5	156
288	D	0	0	0	0	2	0	0
289	1D				0	1	0	158
290	D	0	0	0	63	1	5	0

291	1D	0	0	0	0	1	0	159	106
292	D	0	0	0	63	1	5	0	106
293	1D	0	0	0	0	1	1	160	0
294	D	0	0	0	0	2	5	0	228
295	101D	0	0	0	0	1	0	162	228
296	D	0	0	0	2	1	5	0	0
297	20001D	0	0	0	0	1	1	163	0
298	D	0	0	0	0	1	5	0	0
299	20001D	0	0	0	0	1	1	164	0
300	D	0	0	0	0	1	5	0	0
301	20001D	0	0	0	0	1	1	165	0
302	D	0	0	0	0	1	5	0	0
303	201D	0	0	0	0	1	1	166	0
304	D	0	0	0	0	0	0	0	0
305	1D	0	0	0	0	1	1	167	0
306	D	0	0	0	0	1	5	0	0
307	1D	0	0	0	0	4	1	171	106
308	D	0	0	0	0	1	5	0	106
309	10101D	0	0	0	63	2	0	173	106
310	D	0	0	0	0	1	5	0	106
311	1D	0	0	0	11	1	0	174	112
312	D	0	0	0	0	1	5	0	112
313	.	0	0	0	0	9	0	183	112
314	D	0	0	0	0	1	5	0	112
315	10001D	0	0	0	0	5	0	188	112
316	D	0	0	0	0	1	5	0	126
317	1D	0	0	0	0	4	0	192	126
318	D	0	0	0	0	1	5	0	0
319	1D	0	0	0	0	14	0	206	0
320	D	0	0	0	0	1	5	0	0
321	20001D	0	0	0	0	7	0	213	126
322	D	0	0	0	0	1	5	0	126
323	20001D	0	0	0	0	6	0	219	0
324	D	0	0	0	0	1	5	0	0
325	1D	0	0	0	0	6	0	225	126
326	D	0	0	0	0	1	5	0	126
327	20001D	0	0	0	0	5	0	230	126
328	D	0	0	0	0	1	5	0	126
329	1D	0	0	0	0	22	0	252	126
330	D	0	0	0	0	1	5	0	126
331	1D	0	0	0	0	5	0	257	126
332	D	0	0	0	0	1	5	0	126
333	1D	0	0	0	0	5	0	262	126
334	D	0	0	0	0	1	5	0	126
335	1D	0	0	0	0	7	0	269	112
336	D	0	0	0	0	1	5	0	112
337	1D	0	0	0	0	7	0	276	112
338	D	0	0	0	0	1	5	0	112
339	1D	0	0	0	0	7	0	283	112
340	D	0	0	0	0	1	5	0	112
341	1D	0	0	0	0	3	0	286	112
342	D	0	0	0	0	1	5	0	112
343	1D	0	0	0	0	3	0	289	112
344	D	0	0	0	0	6	5	0	112
345	1D	0	0	0	0	1	0	295	112

Index	Code						
346	20001D	0	0	0	6	5	112
347	D			0	1	1	0
348	1D	0	0	0	13	5	112
349	D			0	1	0	112
350	1D	0	0	0	6	5	112
351	D			0	1	0	112
352	1D	0	0	0	6	5	112
353	D			0	1	0	112
354	1D	0	0	0	6	5	112
355	D			0	1	0	212
356	10101D	0	0	0	6	5	212
357	D			0	0	0	214
358	10101D	0	0	2	1	5	214
359	D			0	1	0	222
360	101D	0	0	0	1	5	222
361	D			0	1	0	212
362	10101D	0	0	0	0	5	212
363	D			0	2	0	214
364	10101D	0	0	0	1	5	214
365	D			0	1	0	218
366	101D	0	0	0	1	5	218
367	D			0	1	0	212
368	10101D	0	0	2	0	5	212
369	D			0	1	0	214
370	10101D	0	0	0	1	5	214
371	D			0	1	0	214
372	10101D	0	0	2	1	5	214
373	D			0	1	0	106
374	10101D	0	0	4	0	5	106
375	D			0	1	0	106
376	10101D	0	0	4	0	5	106
377	D			0	1	0	216
378	101D	0	0	0	1	5	216
379	D			0	1	0	212
380	10101D	0	0	0	0	5	212
381	D			0	2	0	214
382	10101D	0	0	2	1	5	218
383	D			0	1	0	218
384	101D	0	0	0	1	5	212
385	D			0	1	0	212
386	10101D	0	0	0	0	5	214
387	D			0	2	0	214
388	10101D	0	0	2	1	5	214
389	D			0	1	0	214
390	10101D	0	0	0	1	5	214
391	D			0	1	0	214
392	101D	0	0	0	0	5	206
393	D			0	2	0	206
394	10101D	0	0	2	1	5	212
395	D			0	1	0	212
396	10101D	0	0	0	1	5	214
397	D			0	1	0	214
398	10101D	0	0	2	0	5	214
399	D			0	2	0	214
400	D	0	0	2	1	5	214

idx	code						
401	10101D	0	0	0	0	0	0
402	D	0	0	0	40	1	5
403	10101D	0	0	0	0	0	0
404	D	0	0	0	40	1	5
405	101D	0	0	0	0	1	0
406	D	0	0	0	0	1	5
407	10101D	0	0	0	0	0	0
408	D	0	0	0	0	1	5
409	10101D	0	0	0	0	1	0
410	D	0	0	0	4	1	5
411	10101D	0	0	0	0	1	0
412	D	0	0	0	0	1	5
413	101D	0	0	0	0	1	0
414	D	0	0	0	0	0	5
415	20101D	0	0	0	2	2	0
416	D	0	0	0	0	1	5
417	20101D	0	0	0	2	1	0
418	D	0	0	0	0	1	5
419	20101D	0	0	0	40	1	0
420	D	0	0	0	0	0	5
421	20101D	0	0	0	40	1	0
422	D	0	0	0	0	0	5
423	20101D	0	0	0	0	1	0
424	D	0	0	0	0	1	5
425	101D	0	0	0	0	1	0
426	D	0	0	0	0	0	5
427	10201D	0	0	0	0	1	0
428	D	0	0	0	0	1	5
429	101D	0	0	0	0	1	0
430	D	0	0	0	0	1	5
431	10201D	0	0	0	0	1	0
432	D	0	0	0	0	1	0
433	101D	0	0	0	0	1	0
434	D	0	0	0	0	1	5
435	20001D	0	0	0	0	1	1
436	D	0	0	0	0	1	0
437	20001D	0	0	0	0	1	1
438	D	0	0	0	0	1	5
439	20001D	0	0	0	0	1	1
440	D	0	0	0	0	1	5
441	20001D	0	0	0	0	1	1
442	D	0	0	0	0	1	5
443	20001D	0	0	0	0	1	1
444	D	0	0	0	0	1	5
445	20001D	0	0	0	0	1	1
446	D	0	0	0	0	1	5
447	20001D	0	0	0	0	1	1
448	D	0	0	0	0	1	5
449	201D	0	0	0	0	1	1
450	D	0	0	0	0	0	0
451	20001D	0	0	0	0	1	1
452	D	0	0	0	0	1	5
453	20001D	0	0	0	0	1	1
454	D	0	0	0	0	1	5
455	20001D	0	0	0	0	1	1

idx		
364	0	106
365	0	106
366	0	106
367	0	202
368	0	202
369	0	212
370	0	212
371	0	100
373	0	100
374	0	214
375	0	214
376	0	220
377	0	220
378	0	212
379	0	212
380	0	214
381	0	214
382	0	214
383	0	106
384	0	106
385	0	106
386	0	216
387	0	216
388	0	102
389	0	102
390	0	230
391	0	230
392	0	0

456	D			0	1	5		0
457	20001D	0	0	0	1	1	393	0
458	D			0	1	5	0	0
459	20001D	0	0	0	1	1	394	0
460	D			0	1	5	0	0
461	20001D	0	0	0	1	1	395	0
462	D			0	1	5	0	0
463	20001D	0	0	0	1	1	396	0
464	D			0	1	5	0	0
465	20001D	0	0	0	1	1	397	0
466	D			0	1	5	0	0
467	20001D	0	0	0	1	1	398	0
468	D			0	1	5	0	0
469	20001D	0	0	0	1	1	399	0
470	D			0	1	5	0	0
471	20001D	0	0	0	1	1	400	0
472	D			0	1	5	0	0
473	20001D	0	0	0	1	1	401	0
474	D			0	1	5	0	0
475	20001D	0	0	0	1	1	402	0
476	D			0	1	5	0	0
477	20001D	0	0	0	1	1	403	0
478	D			0	1	5	0	0
479	201D	0	0	0	0	0	404	0
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487	20001D	0	0	0	1	5	408	0
488	D			0	1	1	0	0
489	20001D	0	0	0	1	5	409	0
490	D			0	1	1	0	0
491	20001D	0	0	0	1	5	410	0
492	D			0	1	1	0	0
493	20001D	0	0	0	1	5	411	0
494	D			0	1	1	0	0
495	20001D	0	0	0	1	5	412	0
496	D			0	1	1	0	0
497	20001D	0	0	0	1	5	413	0
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499	20001D	0	0	0	1	5	414	0
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503	20001D	0	0	0	1	5	416	0
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505	20001D	0	0	0	1	5	417	0
506	D			0	1	1	0	0
507	20001D	0	0	0	1	5	418	0
508	D			0	1	1	0	0
509	20001D	0	0	0	1	5	419	0
510	D			0	1	5	0	0

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511	20001D	0	0	0	1	1	420
512	D			0	1	5	0
513	20001D	0	0	0	1	1	421
514	D			0	1	5	0
515	20001D	0	0	0	1	1	422
516	D			0	1	5	0
517	20001D	0	0	0	1	1	423
518	D			0	1	5	0
519	20001D	0	0	0	1	1	424
520	D			0	1	5	0
521	20001D	0	0	0	1	1	425
522	D			0	1	5	0
523	20001D	0	0	0	1	1	426
524	D			0	1	5	0
525	20001D	0	0	0	1	1	427
526	D			0	1	5	0
527	20001D	0	0	0	1	1	428
528	D			0	1	5	0
529	20001D	0	0	0	1	1	429
530	D			0	1	5	0
531	20001D	0	0	0	1	1	430
532	D			0	1	5	0
533	201D	0	0	0	0	1	431
534	D			0	2	0	0
535	20001D	0	0	0	1	1	433
536	D			0	1	5	0
537	20001D	0	0	0	1	1	434
538	D			0	1	5	0
539	20001D	0	0	0	1	1	435
540	D			0	1	5	0
541	20001D	0	0	0	1	1	436
542	D			0	1	5	0
543	20001D	0	0	0	1	1	437
544	D			0	1	5	0
545	20001D	0	0	0	1	1	438
546	D			0	1	5	0
547	20001D	0	0	0	1	1	439
548	D			0	1	5	0
549	20001D	0	0	0	1	1	440
550	D			0	1	5	0
551	20001D	0	0	0	1	1	441
552	D			0	1	5	0
553	20001D	0	0	0	1	1	442
554	D			0	1	5	0
555	20001D	0	0	0	1	1	443
556	D			0	1	5	0
557	20001D	0	0	0	1	1	444
558	D			0	1	5	0
559	20001D	0	0	0	1	1	445
560	D			0	1	5	0
561	201D	0	0	0	1	1	446
562	D			0	0	0	0
563	20001D	0	0	0	1	1	447
564	D			0	1	5	0
565	20001D	0	0	0	1	1	448

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0      0      5      1      0                           D   566
0    449      1      1      0      0      0      0 20001D   567
0      0      5      1      0                           D   568
0    450      1      1      0      0      0      0 20001D   569
0      0      5      1      0                           D   570
0    451      1      1      0      0      0      0 20001D   571
0      0      5      1      0                           D   572
0    452      1      1      0      0      0      0 20001D   573
0      0      5      1      0                           D   574
0    453      1      1      0      0      0      0 20001D   575
0      0      5      1      0                           D   576
0    454      1      1      0      0      0      0 20001D   577
0      0      5      1      0                           D   578
0    455      1      1      0      0      0      0 20001D   579
0      0      5      1      0                           D   580
0    456      1      1      0      0      0      0 20001D   581
0      0      5      1      0                           D   582
0    457      1      1      0      0      0      0 20001D   583
0      0      5      1      0                           D   584
0    458      1      1      0      0      0      0 20001D   585
0      0      5      1      0                           D   586
0    459      1      1      0      0      0      0 20001D   587
0      0      5      1      0                           D   588
0    460      1      1      0      0      0      0 20001D   589
0      0      5      1      0                           D   590
0    461      1      1      0      0      0      0 20001D   591
0      0      5      1      0                           D   592
0    462      1      0      0      0      0      0    201D   593
0      0      0      2      0                           D   594
0    464      1      1      0      0      0      0 20001D   595
0      0      5      1      0                           D   596
0    465      1      1      0      0      0      0 20001D   597
0      0      5      1      0                           D   598
0    466      1      1      0      0      0      0 20001D   599
0      0      5      1      0                           D   600
0    467      1      1      0      0      0      0 20001D   601
0      0      5      1      0                           D   602
0    468      1      1      0      0      0      0 20001D   603
0      0      5      1      0                           D   604
0    469      1      1      0      0      0      0 20001D   605
0      0      5      1      0                           D   606
0    470      1      1      0      0      0      0 20001D   607
0      0      5      1      0                           D   608
0    471      1      0      0      0      0      0    201D   609
0      0      0      1      0                           D   610
0    472      1      1      0      0      0      0 20001D   611
0      0      5      1      0                           D   612
0    473      1      1      0      0      0      0 20001D   613
0      0      5      1      0                           D   614
0    474      1      1      0      0      0      0 20001D   615
0      0      5      1      0                           D   616
0    475      1      1      0      0      0      0 20001D   617
0      0      5      1      0                           D   618
0    476      1      1      0      0      0      0 20001D   619
0      0      5      1      0                           D   620
```

621	20001D	0	0	0	0	1	1
622	D	0	0	0	0	1	5
623	20001D	0	0	0	0	1	1
624	D	0	0	0	0	1	5
625	20001D	0	0	0	0	1	1
626	D	0	0	0	0	1	5
627	20001D	0	0	0	0	1	1
628	D	0	0	0	0	1	5
629	20001D	0	0	0	0	1	1
630	D	0	0	0	0	1	5
631	20001D	0	0	0	0	1	1
632	D	0	0	0	0	1	5
633	20001D	0	0	0	0	1	1
634	D	0	0	0	0	1	5
635	20001D	0	0	0	0	1	1
636	D	0	0	0	0	1	5
637	20001D	0	0	0	0	1	1
638	D	0	0	0	0	0	0
639	201D	0	0	0	0	1	1
640	D	0	0	0	0	0	0
641	10101D	0	0	0	1	1	0
642	D	0	0	0	0	1	5
643	101D	0	0	0	0	1	1
644	D	0	0	0	0	1	5
645	101D	0	0	0	0	1	0
646	D	0	0	0	0	0	5
647	101D	0	0	0	0	1	0
648	D	0	0	0	0	0	5
649	10101D	0	0	0	11	2	0
650	D	0	0	0	0	1	5
651	10101D	0	0	0	3	2	0
652	D	0	0	0	0	1	5
653	101D	0	0	0	0	1	1
654	D	0	0	0	0	0	0
655	101D	0	0	0	0	1	0
656	D	0	0	0	0	0	5
657	10101D	0	0	0	0	1	1
658	D	0	0	0	0	1	5
659	101D	0	0	0	2	1	1
660	D	0	0	0	0	1	0
661	101D	0	0	0	0	1	0
662	D	0	0	0	0	0	5
663	10101D	0	0	0	3	1	1
664	D	0	0	0	0	1	5
665	101D	0	0	0	0	1	1
666	D	0	0	0	0	1	0
667	101D	0	0	0	0	1	0
668	D	0	0	0	0	0	5
669	10101D	0	0	0	0	1	1
670	D	0	0	0	0	1	5
671	101D	0	0	0	4	1	1
672	D	0	0	0	0	1	0
673	101D	0	0	0	0	1	0
674	D	0	0	0	0	1	5
675	10101D	0	0	0	0	0	1

477	0
478	0
479	0
480	0
481	0
482	0
483	0
484	0
485	0
486	0
487	0
488	0
489	0
490	214
491	214
493	0
495	212
496	212
497	212
498	212
499	106
500	106
501	228
502	228
503	212
504	212
505	214
506	214

Idx	D				M1	M2	M3	N	N
676	D				0	2	0	0	0
677	101D	0	0	0	0	1	0	507	214
678	D				5	1	5	0	214
679	101D	0	0	0	0	1	1	508	0
680	D				0	1	5	0	0
681	10101D	0	0	0	0	0	1	509	0
682	D				0	1	0	0	214
683	101D	0	0	0	6	1	0	510	214
684	D				0	1	5	0	0
685	101D	0	0	0	0	1	1	511	0
686	D				0	1	5	0	0
687	10101D	0	0	0	0	0	1	512	214
688	D				0	1	0	0	214
689	101D	0	0	0	9	1	0	513	0
690	D				0	1	5	0	0
691	101D	0	0	0	0	1	1	514	0
692	D				0	1	5	0	214
693	10101D	0	0	0	0	0	1	515	214
694	D				0	1	0	0	0
695	101D	0	0	0	8	1	0	516	0
696	D				0	1	5	0	0
697	101D	0	0	0	0	1	1	517	214
698	D				0	1	5	0	214
699	10101D	0	0	0	0	0	1	518	0
700	D				10	1	0	0	0
701	101D	0	0	0	0	1	0	519	0
702	D				0	1	5	0	214
703	101D	0	0	0	0	1	1	520	214
704	D				0	1	5	0	212
705	10100D	0	0	0	2	0	0	521	212
706	D				0	1	5	0	214
707	10101D	0	0	0	0	1	0	522	214
708	D				0	1	5	0	210
709	101D	0	0	0	0	1	0	523	210
710	D				0	1	5	0	212
711	10101D	0	0	0	11	0	0	524	212
712	D				0	1	5	0	106
713	10101D	0	0	0	1	1	0	525	106
714	D				0	2	5	0	228
715	101D	0	0	0	0	1	1	527	228
716	D				0	1	0	0	0
717	10101D	0	0	0	2	0	0	528	0
718	D				0	1	5	0	214
719	10101D	0	0	0	0	1	1	529	214
720	D				0	1	5	0	0
721	101D	0	0	0	0	1	0	530	0
722	D				0	1	5	0	212
723	10101D	0	0	0	0	0	0	531	212
724	D				0	1	5	0	212
725	101D	0	0	0	0	0	0	532	212
726	D				0	2	5	0	212
727	20101D	0	0	0	0	0	0	534	212
728	D				0	1	5	0	212
729	101D	0	0	0	0	0	0	535	212
730	D				0	2	5	0	212

ID	Code							Value	
731	101D	0	0	0	0	0	0	537	212
732	D				0	3	5	0	212
733	101D	0	0	0	0	0	0	540	212
734	D				0	3	5	0	212
735	101D	0	0	0	0	0	0	543	212
736	D				0	3	5	0	212
737	101D	0	0	0	0	0	0	546	212
738	D				0	3	5	0	212
739	101D	0	0	0	0	0	0	549	212
740	D				0	3	5	0	212
741	101D	0	0	0	0	0	0	552	212
742	D				0	3	5	0	212
743	101D	0	0	0	0	0	0	555	212
744	D				0	3	5	0	212
745	101D	0	0	0	0	0	0	558	212
746	D				0	3	5	0	212
747	101D	0	0	0	0	0	0	561	212
748	D				0	3	5	0	212
749	101D	0	0	0	0	0	0	564	212
750	D				0	3	5	0	212
751	101D	0	0	0	0	0	0	567	212
752	D				0	3	5	0	212
753	101D	0	0	0	0	0	0	570	212
754	D				0	3	5	0	212
755	101D	0	0	0	0	0	0	573	212
756	D				0	3	5	0	212
757	101D	0	0	0	0	0	0	576	212
758	D				0	3	5	0	212
759	101D	0	0	0	0	0	0	579	212
760	D				0	3	5	0	212
761	101D	0	0	0	0	0	0	582	212
762	D				0	3	5	0	212
763	101D	0	0	0	0	0	0.5	585	212
764	D				0	3	5	0	212
765	101D	0	0	0	0	0	0	588	212
766	D				0	3	5	0	212
767	101D	0	0	0	0	0	0	591	212
768	D				0	3	5	0	212
769	101D	0	0	0	0	0	0	594	212
770	D				0	3	5	0	212
771	101D	0	0	0	0	0	0	597	212
772	D				0	2	5	0	212
773	101D	0	0	0	0	0	0	599	212
774	D				0	3	5	0	212
775	101D	0	0	0	0	0	0	602	212
776	D				0	3	5	0	212
777	101D	0	0	0	0	0	0	605	212
778	D				0	2	5	0	212
779	101D	0	0	0	0	0	0	607	212
780	D				0	3	5	0	212
781	101D	0	0	0	0	0	0	610	212
782	D				0	3	5	0	212
783	101D	0	0	0	0	0	0	613	212
784	D				0	3	5	0	212
785	101D	0	0	0	0	0	0	616	212

ID	Code								
786	D				0	3	5	0	212
787	101D	0	0	0	0	0	0	619	212
788	D				0	3	5	0	212
789	101D	0	0	0	0	0	0	622	212
790	D				0	3	5	0	212
791	101D	0	0	0	0	0	0	625	212
792	D				0	3	5	0	212
793	101D	0	0	0	0	0	0	628	212
794	D				0	3	5	0	212
795	101D	0	0	0	0	0	0	631	212
796	D				0	3	5	0	212
797	101D	0	0	0	0	0	0	634	212
798	D				0	2	5	0	212
799	101D	0	0	0	0	0	0	636	212
800	D				0	3	5	0	212
801	101D	0	0	0	0	0	0	639	212
802	D				0	2	5	0	212
803	101D	0	0	0	0	0	0	641	212
804	D				0	3	5	0	212
805	101D	0	0	0	0	0	0	644	212
806	D				0	2	5	0	212
807	101D	0	0	0	0	0	0	646	212
808	D				0	2	5	0	212
809	101D	0	0	0	0	0	0	648	212
810	D				0	3	5	0	212
811	101D	0	0	0	0	0	0	651	212
812	D				0	3	5	0	212
813	101D	0	0	0	0	0	0	654	212
814	D				0	2	5	0	212
815	101D	0	0	0	0	0	0	656	212
816	D				0	3	5	0	212
817	101D	0	0	0	0	0	0	659	212
818	D				0	2	5	0	212
819	101D	0	0	0	0	0	0	661	212
820	D				0	3	5	0	212
821	101D	0	0	0	0	0	0	664	212
822	D				0	3	5	0	212
823	101D	0	0	0	0	0	0	667	212
824	D				0	3	5	0	212
825	101D	0	0	0	0	0	0	670	212
826	D				0	3	5	0	212
827	101D	0	0	0	0	0	0	673	212
828	D				0	3	5	0	212
829	101D	0	0	0	0	0	0	676	212
830	D				0	3	5	0	212
831	101D	0	0	0	0	0	0	679	212
832	D				0	3	5	0	212
833	101D	0	0	0	0	0	0	682	212
834	D				0	3	5	0	212
835	101D	0	0	0	0	0	0	685	212
836	D				0	3	5	0	212
837	101D	0	0	0	0	0	0	688	212
838	D				0	3	5	0	212
839	101D	0	0	0	0	0	0	691	212
840	D				0	3	5	0	212

#									
841	101D	0	0	0	0	0	0	694	212
842	D	0	0	0	0	3	5	0	212
843	101D	0	0	0	0	0	0	697	212
844	D	0	0	0	0	3	5	0	212
845	101D	0	0	0	0	0	0	700	212
846	D	0	0	0	0	3	5	0	212
847	101D	0	0	0	0	0	0	703	212
848	D	0	0	0	0	3	5	0	212
849	101D	0	0	0	0	0	0	706	212
850	D	0	0	0	0	3	5	0	212
851	101D	0	0	0	0	0	0	709	212
852	D	0	0	0	0	3	5	0	212
853	101D	0	0	0	0	0	0	712	212
854	D	0	0	0	0	3	5	0	212
855	101D	0	0	0	0	0	0	715	212
856	D	0	0	0	0	3	5	0	212
857	101D	0	0	0	0	0	0	718	212
858	D	0	0	0	0	3	5	0	212
859	101D	0	0	0	0	0	0	721	212
860	D	0	0	0	0	3	5	0	212
861	101D	0	0	0	0	0	0	724	212
862	D	0	0	0	0	3	5	0	212
863	101D	0	0	0	0	0	0	727	212
864	D	0	0	0	0	3	5	0	212
865	101D	0	0	0	0	0	0	730	212
866	D	0	0	0	0	2	5	0	212
867	101D	0	0	0	0	0	0	733	212
868	D	0	0	0	0	3	5	0	212
869	101D	0	0	0	0	0	0	735	212
870	D	0	0	0	0	2	5	0	212
871	101D	0	0	0	0	0	0	738	212
872	D	0	0	0	0	2	5	0	212
873	101D	0	0	0	0	0	0	740	212
874	D	0	0	0	0	3	5	0	212
875	101D	0	0	0	0	0	0	742	212
876	D	0	0	0	0	3	5	0	212
877	101D	0	0	0	0	0	0	745	212
878	D	0	0	0	0	3	5	0	212
879	101D	0	0	0	0	0	0	748	212
880	D	0	0	0	0	3	5	0	212
881	101D	0	0	0	0	0	0	751	212
882	D	0	0	0	0	2	5	0	212
883	101D	0	0	0	0	0	0	754	212
884	D	0	0	0	0	5	5	0	212
885	101D	0	0	0	0	0	0	756	212
886	D	0	0	0	0	2	5	0	212
887	101D	0	0	0	1	1	1	761	212
888	D	0	0	0	0	1	5	0	0
889	101D	0	0	0	0	1	1	763	0
890	D	0	0	0	0	1	5	0	0
891	101D	0	0	0	0	1	1	764	0
892	D	0	0	0	0	0	5	0	0
893	101D	0	0	0	0	2	0	765	212
894	D	0	0	0	3	2	5	0	212
895	101D	0	0	0	0	0	0	767	212

Data table (rows 896–950):

ID	Code	C1	C2	C3	V1	V2	V3	V4	V5
896	D	0	0	0	4	2	5	0	212
897	101D	0	0	0	0	0	0	769	212
898	D	0	0	0	5	3	5	0	212
899	101D	0	0	0	0	0	0	772	212
900	D	0	0	0	6	3	5	0	212
901	101D	0	0	0	0	0	0	775	212
902	D	0	0	0	7	3	5	0	212
903	101D	0	0	0	0	0	0	778	212
904	D	0	0	0	8	3	5	0	212
905	101D	0	0	0	0	0	0	781	212
906	D	0	0	0	100	5	5	0	212
907	101D	0	0	0	0	0	0	786	212
908	D	0	0	0	101	10	5	0	0
909	101D	0	0	0	0	1	1	796	0
910	D	0	0	0	0	6	5	0	0
911	101D	0	0	0	0	1	1	802	212
912	D	0	0	0	0	2	5	0	212
913	101D	0	0	0	105	0	0	804	0
914	D	0	0	0	0	15	5	0	0
915	101D	0	0	0	0	0	0	819	0
916	D	0	0	0	0	2	5	0	0
917	10001D	0	0	0	0	0	0	821	110
918	D	0	0	0	0	1	5	0	110
919	20001D	0	0	0	0	1	0	822	100
920	D	0	0	0	0	1	5	0	100
921	10201D	0	0	0	0	1	0	823	0
922	D	0	0	0	0	1	5	0	0
923	1D	0	0	0	0	0	1	824	120
924	D	0	0	0	0	1	0	0	120
925	00001D	0	0	0	0	1	0	825	110
926	D	0	0	0	0	1	5	0	110
927	10201D	0	0	0	0	1	0	826	0
928	D	0	0	0	0	1	5	0	0
929	20001D	0	0	0	0	1	1	827	0
930	D	0	0	0	0	0	0	0	0
931	10201D	0	0	0	0	1	0	828	100
932	D	0	0	0	0	1	5	0	100
933	1D	0	0	0	0	1	0	829	0
934	D	0	0	0	0	1	5	0	0
935	20001D	0	0	0	0	1	0	830	122
936	D	0	0	0	0	0	5	0	122
937	20001D	0	0	0	0	1	1	831	128
938	D	0	0	0	0	1	0	0	128
939	10201D	0	0	0	0	1	0	832	100
940	D	0	0	0	0	15	5	0	100
941	1D	0	0	0	0	1	0	847	110
942	D	0	0	0	0	1	5	0	110
943	20001D	0	0	0	0	1	0	848	0
944	D	0	0	0	0	1	5	0	0
945	20001D	0	0	0	0	0	0	849	118
946	D	0	0	0	0	1	5	0	118
947	10201D	0	0	0	0	1	1	850	100
948	D	0	0	0	0	1	0	0	100
949	1D	0	0	0	0	1	0	851	
950	20001D	0	0	0	0	1	5	0	

951	20001D	0	0	0	0	1	0	852	110
952	D	0	0	0	0	1	5	0	110
953	10201D	0	0	0	0	0	1	853	0
954	D	0	0	0	0	1	0	0	0
955	1D	0	0	0	1	1	0	854	118
956	D	0	0	0	0	1	5	0	118
957	00001D	0	0	0	0	1	0	855	110
958	D	0	0	0	0	0	5	0	110
959	10201D	0	0	0	0	1	1	856	0
960	D	0	0	0	0	1	0	0	0
961	1D	0	0	0	0	1	0	857	0
962	D	0	0	0	0	1	5	0	0
963	1D	0	0	0	3	45	0	858	128
964	D	0	0	0	0	1	5	0	128
965	1D	0	0	0	2	45	0	903	128
966	D	0	0	0	0	0	5	0	128
967	10201D	0	0	0	0	1	1	948	0
968	D	0	0	0	0	1	0	0	0
969	20001D	0	0	0	0	56	0	949	114
970	D	0	0	0	0	0	5	0	114
971	10201D	0	0	0	0	1	1	1005	0
972	D	0	0	0	0	1	0	0	0
973	20001D	0	0	0	0	57	0	1006	114
974	D	0	0	0	0	0	5	0	114
975	10201D	0	0	0	0	1	1	1063	0
976	D	0	0	0	0	1	0	0	0
977	1D	0	0	0	0	50	0	1064	114
978	D	0	0	0	0	1	5	0	114
979	20001D	0	0	0	0	1	0	1114	100
980	D	0	0	0	0	1	5	0	100
981	20001D	0	0	0	0	1	0	1115	110
982	D	0	0	0	0	0	5	0	110
983	10201D	0	0	0	0	1	0	1116	0
984	D	0	0	0	0	1	0	0	0
985	20001D	0	0	0	0	1	0	1117	118
986	D	0	0	0	0	1	5	0	118
987	20001D	0	0	0	0	1	0	1118	100
988	D	0	0	0	0	1	5	0	100
989	20001D	0	0	0	0	1	0	1119	110
990	D	0	0	0	0	1	5	0	110
991	10201D	0	0	0	0	1	0	1120	0
992	D	0	0	0	0	1	0	0	0
993	1D	0	0	0	0	1	0	1121	118
994	D	0	0	0	0	1	5	0	118
995	10001D	0	0	0	15	0	0	1122	406
996	D	0	0	0	0	1	0	0	406
997	10001D	0	0	0	17	0	0	1123	406
998	D	0	0	0	0	1	0	0	406
999	10001D	0	0	0	16	0	0	1124	406
1000	D	0	0	0	0	1	0	0	406
1001	201D	0	0	0	0	1	0	1125	404
1002	D	0	0	0	0	1	0	0	404
1003	101D	0	0	0	0	0	0	1126	106
1004	D	0	0	0	34	6	5	0	106
1005	101D	0	0	0	0	0	0	1132	106

ID	Type								
1006	D	0	0	0	35	6	5	0	106
1007	101D	0	0	0	0	0	0	1138	106
1008	D	0	0	0	31	5	5	0	106
1009	101D	0	0	0	0	0	0	1143	106
1010	D	0	0	0	37	13	5	0	106
1011	101D	0	0	0	0	0	0	1156	106
1012	D	0	0	0	32	5	5	0	106
1013	101D	0	0	0	0	0	0	1161	106
1014	D	0	0	0	33	7	5	0	106
1015	101D	0	0	0	0	0	0	1168	106
1016	D	0	0	0	36	9	5	0	106
1017	101D	0	0	0	0	0	0	1177	106
1018	D	0	0	0	38	11	5	0	102
1019	1D	0	0	0	0	0	0	1188	102
1020	D	0	0	0	0	1	0	0	228
1021	101D	0	0	0	0	1	0	1189	228
1022	D	0	0	0	0	1	5	0	130
1023	1D	0	0	0	0	1	0	1190	130
1024	D	0	0	0	0	1	5	0	140
1025	1D	0	0	0	0	1	0	1191	140
1026	D	0	0	0	0	1	5	0	100
1027	1020501D	0	0	0	0	1	0	1192	100
1028	D	0	0	0	0	1	5	0	142
1029	1D	0	0	0	0	1	0	1193	142
1030	D	0	0	0	0	3	5	0	0
1031	20501D	0	0	0	0	1	0	1194	0
1032	D	0	0	0	0	1	5	0	142
1033	20001D	0	0	0	0	1	0	1195	142
1034	D	0	0	0	0	1	5	0	144
1035	1D	0	0	0	0	1	0	1196	144
1036	D	0	0	0	0	1	5	0	0
1037	1D	0	0	0	0	0	0	1197	0
1038	D	0	0	0	0	3	5	0	212
1039	101D	0	0	0	0	0	0	1198	212
1040	D	0	0	0	2	8	5	0	212
1041	101D	0	0	0	0	1	0	1201	212
1042	D	0	0	0	102	17	5	0	112
1043	20001D	0	0	0	0	0	0	1209	112
1044	D	0	0	0	0	1	5	0	124
1045	00001D	0	0	0	0	1	0	1226	124
1046	D	0	0	0	0	1	0	0	110
1047	1D	0	0	1063	0	1	0	1227	110
1048	D	0	0	0	0	1	5	0	110
1049	1D	0	0	1063	0	0	0	1228	110
1050	D	0	0	0	0	1	5	0	406
1051	10001D	0	0	0	0	0	0	1229	406
1052	D	0	0	0	15	1	0	0	124
1053	00001D	0	0	0	0	1	0	1230	124
1054	D	0	0	0	0	3	0	0	108
1055	10001D	0	0	0	0	1	0	1231	108
1056	D	0	0	0	0	3	0	0	108
1057	10001D	0	0	0	0	3	0	1232	108
1058	D	0	0	0	0	1	0	0	108
1059	10001D	0	0	0	0	3	0	1233	108
1060	D	0	0	0	0	1	0	0	108

Directory Entry Section:

```
108  1234    3  0   0         0   0  10001D 1061
108     0    1  0   0         0   0       D 1062
410  1235    0  0   0  1053   0  20201D 1063
410     0    1  0   0         0   0       D 1064
212  1236    0  5   0         0   0    101D 1065
212     0    1  5   0         0   0       D 1066
128  1237    1  0   5         0   0      1D 1067
128     0   19  5   0         0   0       D 1068
128  1256    1  0   0         0   0      1D 1069
128     0   19. 5   4         0   0       D 1070
128  1275    1  0   0         0   0      1D 1071
128     0    1  5   9         0   0       D 1072
128  1283    8  0   0      001020001D 1073
100     0    1  5   0         0   0       D 1074
100  1284    1  0   0         0   0  20001D 1075
112     0    1  5   0         0   0       D 1076
112  1301   17  0   0         0   0  10001D 1077
110     0    1  5   0         0   0       D 1078
110  1302    1  0   0         0   0  10001D 1079
110     0    1  5   0         0   0       D 1080
110  1303    1  0   0         0   0  10001D 1081
110     0    1  5   0         0   0       D 1082
110  1304    1  0   0         0   0  10001D 1083
110     0    1  5   0         0   0       D 1084
308  1305    1  0   0         0   0    201D 1085
308     0    0  0   0         0   0       D 1086
124  1306    1  0   0         0   0      1D 1087
124     0    0  0   0  1087    0       D 1088
408  1308    2  0   0         0   0      1D 1089
408     0    0  0   0         0   0       D 1090
124  1309    1  0   0         0   0      1D 1091
124     0    2  0   0  1091    0       D 1092
408  1311    0  0   1         0   0      1D 1093
408     0    1  0   0         0   0       D 1094
```

Parameter Data Section:

```
0,1,0,0,0,0,0,1,0,0,0,0,0,1,0,0,0,0,1,0,0,0;               1P
0,1,0,0,0,0,0,0,0,1,0,0,-1,0,0,0,0,1,0,0,0,0;              3P
0,0,0,0,0,1,0,0,0,0,0,0,1,0,0,0,1,0,0,0,0;                 5P
0,1,0,0,0,0,0,-1,0,0,0,0,0,0,0,0,1,0,0,0,0;                7P
0,0,0,0,-1,0,0,-1,0,0,0,0,0,0,1,0,0,0,0;                   9P
0,-1,0,0,0,0,0,0,0,0,0,0,1,0,0,0,0;                       11P
0,-1,0,0,0,0,0,0,0.939693,0.34202,0.0,0.0,-0.34202,       13P
0.939693,0.0;
0,-1.0,0,0,0,0,0,0,1,0,0,0,0,0,0,-1,0,0,0;                15P
0,0.707107,-0.408248,0.57735,0.0,0.707107,0.408248,-0.57735,  17P
0,0,0,0.816497,0.57735,0.0;
0,-0.707107,-0.408248,0.57735,0.0,0.707107,-0.408248,0.57735,  19P
0.0,-2.52368E-08,0.816497,0.57735,0.0;
0,-0.868833,0.0,0.495105,0.0,0.0,0.495105,0.0,0.868833,0.0,0.0,  21P
1.0,0.0,0.0;
406,1,1HA;                                                 23P
124,1.0,0,0,0,0,0,1.0,0,0,0,0,0,0,0,0,1.0,0,0;             25P
108,1.0,0,0,0,0,0.0;                                       27P
108,0,1,0,0,0,17.0;                                        29P
108,1,0,0,0,0,22.0;                                        31P
108,0,0,1,0,0,0.0;                                         33P
```

Entity and Form Number	Entity Description on N-entity Drawing	
406 F 15	top view name	16
124 F 0	top view matrix	17
108 F 0	top view plane	18
108 F 0	top view plane	19
108 F 0	top view plane	20
108 F 0	top view plane	21

```
410,2,1.0,27,29,31,33,0,0,1,23;
110,1.0,16.0,0.0,1.0,9.99928E-03,0.0;
110,3.0,16.0,0.0,3.0,9.99928E-03,0.0;
110,5.0,16.0,0.0,5.0,9.99928E-03,0.0;
110,7.0,16.0,0.0,7.0,9.99928E-03,0.0;
110,9.0,16.0,0.0,9.0,9.99928E-03,0.0;
110,11.0,16.0,0.0,11.0,9.99928E-03,0.0;
110,13.0,16.0,0.0,13.0,9.99928E-03,0.0;
110,15.0,16.0,0.0,15.0,9.99928E-03,0.0;
110,17.0,16.0,0.0,17.0,9.99928E-03,0.0;
110,19.0,16.0,0.0,19.0,9.99928E-03,0.0;
110,21.0,16.0,0.0,21.0,9.99928E-03,0.0;
110,21.0,16.0,0.0,1.0,16.0,0.0;
110,1.0,14.0,0.0,21.0,14.0,0.0;
110,1.0,12.0,0.0,21.0,12.0,0.0;
110,1.0,10.0,0.0,21.0,10.0,0.0;
110,1.0,8.0,0.0,21.0,8.0,0.0;
110,1.0,6.0,0.0,21.0,6.0,0.0;
110,1.0,4.0,0.0,21.0,4.0,0.0;
110,1.0,2.0,0.0,21.0,2.0,0.0;
100,0.0,2.0,15.0,2.0,14.5,1.5,15.0.0:
116,3.5,15.0,0.0;
110,3.5,15.0,0.0,3.5,15.5,0.0;
100,0.0,0.0,0.0,0.0,0.5,-0.5,0.0;
124,1.0,0.0,0.0,8.0,0.0,1.0,0.0,0.0,15.0,0.0,0.0,1.0,0.0,0.0,0.5,
104,0.0625,0.0,0.25,0.0,0.0,0.0,-0.015625,0.0,0.0,0.5,0.0,0.0,0.5,
-1.9470E-07;
116,18.0,15.25,0.0;
116,18.0,14.75,0.0;
100,0.0,20.0,15.0,20.5,15.0,20.5,15.0.0;
0,16.0,9.5,0.0,16.0,8.5,0.0;
110,3.5,13.5,0.0,3.5,12.5,0.0;
110,3.5,12.5,0.0,4.5,12.5,0.0;
110,4.5,12.5,0.0,4.5,13.5,0.0;
110,4.5,13.5,0.0,3.5,13.5,0.0;
110,3.75,13.25,0.0,3.75,12.75,0.0;
110,3.75,12.75,0.0,4.25,12.75,0.0;
110,4.25,12.75,0.0,4.25,13.25,0.0;
110,4.25,13.25,0.0,3.75,13.25,0.0;
110,5.5,13.5,0.0,5.5,12.5,0.0;
110,5.5,12.5,0.0,6.5,12.5,0.0;
110,6.5,12.5,0.0,6.5,13.5,0.0;
110,6.5,13.5,0.0,5.5,13.5,0.0;
110,7.5,12.5,0.0,8.5,12.5,0.0;
110,8.5,12.5,0.0,8.5,13.5,0.0;
110,9.5,13.5,0.0,10.5,13.5,0.0;
110,10.5,13.5,0.0,10.5,12.5,0.0;
110,10.5,12.5,0.0,9.5,12.5,0.0;
110,9.5,12.5,0.0,9.5,13.5,0.0;
110,12.5,13.0,0.0,12.5,13.5,0.0;
110,12.5,13.5,0.0,11.5,13.5,0.0;
110,11.5,13.5,0.0,11.5,12.5,0.0;
110,11.5,12.5,0.0,12.0,12.5,0.0;
110,13.5,13.5,0.0,14.5,13.5,0.0;
110,14.5,13.5,0.0,14.5,12.5,0.0;
```

			Description
22	35P	410	top view
23	37P	110	vertical grid line
24	39P	110	vertical grid line
25	41P	110	vertical grid line
26	43P	110	vertical grid line
27	45P	110	vertical grid line
28	47P	110	vertical grid line
29	49P	110	vertical grid line
30	51P	110	vertical grid line
31	53P	110	vertical grid line
32	55P	110	vertical grid line
33	57P	110	vertical grid line
34	59P	110	horizontal grid line
35	61P	110	horizontal grid line
36	63P	110	horizontal grid line
37	65P	110	horizontal grid line
38	67P	110	horizontal grid line
39	69P	110	horizontal grid line
40	71P	110	horizontal grid line
41	73P	110	horizontal grid line
42	75P	100	circular arc
43	77P	116	point for 102
44	79P	110	line for 102
45	81P	100	circular arc for 102
46	83P	124 F 0	matrix for 104 Form 1
47	85P	104 F 1	conic - ellipse
48	85P		
49	87P	116	top point for 106 Form 20
50	89P	116	bottom point for 106 Form 20
51	91P	110	circular arc for 106 Form 21
52	93P	110	line for 106 Form 32 box
53	95P	110	line for 106 Form 32 box
54	97P	110	line for 106 Form 32 box
55	99P	110	line for 106 Form 32 box
56	101P	110	line for 106 Form 32 box
57	103P	110	line for 106 Form 32 box
58	105P	110	line for 106 Form 32 box
59	107P	110	line for 106 Form 32 box
60	109P	110	line for 106 Form 33 box
61	111P	110	line for 106 Form 33 box
62	113P	110	line for 106 Form 33 box
63	115P	110	line for 106 Form 33 box
64	117P	110	line for 106 Form 34 box
65	119P	110	line for 106 Form 34 box
66	121P	110	line for 106 Form 35 box
67	123P	110	line for 106 Form 35 box
68	125P	110	line for 106 Form 35 box
69	127P	110	line for 106 Form 35 box
70	129P	110	line for 106 Form 36 box
71	131P	110	line for 106 Form 36 box
72	133P	110	line for 106 Form 36 box
73	135P	110	line for 106 Form 36 box
74	137P	110	line for 106 Form 37 box
75	139P	110	line for 106 Form 37 box
76	141P	110	line for 106 Form 37 box

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Parameter Data	Entity Type	Form	Seq.	Pointer	Description
110,14.5,12.5,0.0,13.5,12.5,0.0;	110		77	143P	line for 106 Form 37 box
110,13.5,12.5,0.0,13.5,13.5,0.0;	110		78	145P	line for 106 Form 37 box
110,16.0,13.5,0.0,16.5,13.5,0.0;	110		79	147P	line for 106 Form 38 box
110,16.5,13.5,0.0,16.5,12.5,0.0;	110		80	149P	line for 106 Form 38 box
110,16.5,12.5,0.0,15.5,12.5,0.0;	110		81	151P	line for 106 Form 38 box
110,15.5,12.5,0.0,15.5,13.0,0.0;	110		82	153P	line for 106 Form 38 box
100,0.0,8.5,12.5,8.5,13.5,7.5,12.5;	100		83	155P	circular arc for 106 Form 34 box
100,0.0,12.5,12.5,13.0,12.0,12.5;	100		84	157P	circular arc for 106 Form 36 box
106,1,12,0,20.6,15.,20.,15.,20.05,15.,,19.95,15.,,19.9,15.,,19.4, 15.,20.,15.,6.20.,15.1,20.,15.06,20.,14.94,20.,14.9,20.,14.4;	106	F 21	85	159P	centerline thru centers
106,1,6,0.0,18.0,15.3681,18.0,15.125,18.0,15.0625,18.0,14.9375, 18.0,14.875,18.0,14.6319;	106	F 20	86	159P	centerline thru points
0,1,6,0.0,20.0,15.6181,20.0,15.125,20.0,15.0625,20.0,14.9375, 20.0,14.875,20.0,14.3819;	116		87	161P	top point for 106 Form 40
116,17.5,13.5,0.0;	116		88	161P	bottom point for 106 Form 40
116,17.5,12.5,0.0;	106	F 63	89	163P	simple closed area for 108 Form 1
108,1,5,0.0,3.5,10.5,3.5,11.5,4.5,11.5,4.5,10.5,3.5,10.5;	108	F 1	90	163P	bounded plane
108,0.0,0.0,1.0,0.0,169,0.0,0.0,0.0,0.0,0.0,0.0;	110		91	165P	line
110,6.0,11.5,0.0,6.0,10.5,0.0;	116		92	167P	point
116,12.0,11.0,0.0;	110		93	169P	line for 230
110,17.5,1.5,0.0,18.5,1.5,0.0;	110		94	171P	line for 230
110,18.5,1.5,0.0,18.5,0.5,0.0;	110		95	173P	line for 230
110,18.5,0.5,0.0,17.5,0.5,0.0;	110		96	175P	line for 230
110,17.5,0.5,0.0,17.5,1.5,0.0;	100		97	177P	circular arc for 222
100,0.0,7.25,0.5,7.75,0.5,7.25,1.0;	116		98	179P	right point for 218
116,4.25,0.5,0.0;	116		99	181P	left point for 218
116,3.5,0.5,0.0;	116		100	183P	left point for 216
116,1.5,0.5,0.0;	116		101	185P	right point for 216
116,2.5,0.5,0.0;	110		102	187P	top line for 202
110,7.5,7.0,0.0,7.25,6.75,0.0;	214	F 7	103	189P	leader - rectangle
214,1,0.1,0.1,0.0,11.5,3.0,12.5,3.0;	214	F 11	104	191P	leader - open triangle
214,1,0.15,0.05,0.0,19.5,3.0,20.5,3.0;	116		105	193P	point for 210
116,11.5,6.75,0.0;	100		106	195P	circular arc for 206
100,0.0,9.5,7.0,9.75,7.0,9.75,7.0;	110		107	197P	bottom line for 202
110,7.25,6.75,0.0,7.5,6.75,0.0;	100		108	199P	circular arc for 228 Form 2
100,0.0,14.25,1.25,14.625,1.25,14.625,1.25;	110		109	201P	line for 228 Form 2
110,13.875,1.25,0.0,14.625,1.25,0.0;			110	203P	
0;			111	205P	
0;			112	207P	
0;			113	209P	
0;			114	211P	
0;			115	213P	
110,9.5,1.0,0.0,10.5,1.0,0.0;			116	215P	
0;			117	217P	
0;			118	219P	
0;	110		119	221P	line for 228 Form 0
0;			120	223P	
0;			121	225P	
0;			122	227P	
0;			123	229P	
0;			124	231P	
0.8.34853,12.5,0.0,8.5,12.6515,0.0;			125	233P	
116,6.0,0.5,0.0;			126	235P	
110,1.0,0.01,0.0,21.0,0.01,0.0;			127	237P	
110,19.75,10.75,0.0,20.0,11.0,-1.0;	116		128	239P	point for 220
0,0.0,20.0,11.0,20.25,11.0,19.75,11.0;	110		129	241P	horizontal grid line
	110		130	243P	line for 122
			131	245P	

Line	Type	Description
247P 132	124 F 0	matrix for 104 Form 0
249P 133	104 F 0	conic - general
251P 134		
253P 135		
255P 136	124 F 0	matrix for 104 Form 3
257P 137		
257P 138	104 F 3	conic - parabola
259P 139	124 F 0	matrix for 104 Form 2
259P 140		
261P 141	104 F 2	conic - hyperbola
263P 142		
263P 143		
265P 144		
265P 145		
267P 146	100	circular arc to be offset by 130
269P 147	100	circular arc for 130
271P 148		
273P 149		
275P 150		
277P 151		
279P 152		
281P 153		
283P 154		
285P 155		
287P 156	106 F 12	coordinate triples
287P 157		
289P 158	106 F 63	simple closed area for 106 Form 31
291P 159	106 F 63	simple closed area
293P 160		
293P 161		
295P 162	228 F 2	symbol - datum target
297P 163		
299P 164		
301P 165		
303P 166		
305P 167		
305P 168		
305P 169		
305P 170		
307P 171		
307P 172		
309P 173	106 F 63	simple closed area for 228 Form 0
311P 174	106 F 11	linear planar curve
311P 175		
311P 176		
311P 177		
311P 178		
311P 179		
311P 180		
311P 181		
311P 182		
313P 183	112	parametric spline for 106 Form 38
313P 184		
313P 185		
313P 186		

```
0,13.5,11.5,0.0,13.5,10.5,0.0;
0.0,0.14.875,11.0,0.14.5,11.5,14.5,10.5;
0.15.5,11.5,0.0,15.5,10.5,0.0;
0.0,0.16.875,11.0,16.5,11.5,16.5,10.5;
124,1.0,0.0,0.0,6.0,0.0,1.0,0.0,15.0,0.0,0.0,1.0,0.0;
104,0.25,0.0,0.0625,0.0,0.0,-0.015625,0.0,0.25,0.0,0.25,
8.74228E-08;
124,-4.37114E-08,-1.0,0.0,12.0,1.0,-4.37114E-08,0.0,15.0,0.0,0.0,
0.0,1.0,0.0;
104,0.0,0.0,1.0,-1.0,0.0,0.0,0.0,0.25,-0.5,0.25,0.5;
124,-1.0,0.8.74228E-08,-1.0,0.10.25,-8.74228E-08,-1.0,0.0,15.0,0.0,0.0,
0.0,1.0,0.0;
104,-0.015625,0.0,0.0625,0.0,0.0,9.76563E-04,0.0,0.0,0.5,-0.216506,
0.5,0.216506;
0.0,0.18.6563,11.125,18.5,11.5,18.5,10.75;
100,0.0,20.0,8.75,20.5,8.75,19.5,8.75;
100,0.0,20.0,8.75,20.5,8.75,19.5,8.75;
0.14.0,9.75,0.0,14.0,8.5,0.0;
0.18.0,11.75,0.0,18.0,10.5,0.0;
0.17.597,13.5,0.0,17.75,13.5,0.0;
0.1,5,7.43969,-0.34202,1.5,6.5,0.0;
0.2,22313,2.875,6.608,2.5,7.108,2.5,6.108;
0.1,5,7.78171,0.597673,1.5,6.84202,0.939693;
0.3.22313,2.875,6.608,2.5,7.108,2.5,6.108;
106,2,4,15.5,14.5,0.0,15.75,15.0,1.0,16.0,14.75,2.0,16.5,15.5,
3.0;
106,1,5,0.0,1,13.5,2.5,13.5,2.5,12.5,1.5,12.5,1.5,13.5;
106,1,5,0.0,19.5,13.5,20.5,13.5,20.5,12.75,19.5,12.75,19.5,13.5;
106,1,5,11.625,2.9375,0.0,11.625,3.0625,0.0,11.5,3.0625,0.0;
11.5,2.9375,0.0,11.625,2.9375,0.0;
228,723,2,207,209,1,719;
0.13.625,3.0625,0.0,13.5,3.0625,0.0;
0.13.5,3.0625,0.0,13.5,2.9375,0.0;
0.13.5,2.9375,0.0,13.625,2.9375,0.0;
0,4,295,297,299,301;
0.2,11,17.4375,2.9375,0.0,17.4566,2.94096,0.0,17.4738,2.94996,
0.0,17.4875,2.96369,0.0,17.4965,2.98089,0.0,17.5,3.0,0.0,
17.5035,3.01911,0.0,17.5125,3.03631,0.0,17.5262,3.05004,0.0,
17.5434,3.05904,0.0,17.5625,3.0625,0.0;
0.2,4,19.5,3.0,0.0,19.656,2.974,0.0,19.656,3.026,0.0,19.5,3.0,
0.0;
106,1,5,0.0,10.0,1.5,9.5,1.0,10.0,0.5,10.5,1.0,10.0,1.5;
106,1,26,0.0,14.5,14.75,14.4961,14.8127,14.4843,14.8743,
14.4649,14.9341,14.4382,14.9909,14.4045,15.0439,
14.3645,15.0923,14.3187,15.1353,14.2679,15.1722,
14.2129,15.2024,14.1545,15.2255,14.0937,15.2411,
14.0314,15.249,13.9686,15.249,13.9063,15.2411,
13.8455,15.2255,13.7871,15.2024,13.7321,15.1722,
13.6813,15.1353,13.6355,15.0923,13.5955,15.0439,
13.5618,14.9909,13.5351,14.9341,13.5157,14.8743,
13.5039,14.8127,13.5,14.75;
112,3,1,3,2,0.1,0.2,0.15.5,0.175003,-4.29153E-06,0.025002,
13.0,0.0250025,-4.29153E-06,0.075002,0.0,0.0,0.0,0.15.7,0.25,
0.0750017,-0.025003,13.1,0.25,0.225002,-0.0750015,0.0,0.0,0.0,
0.0,0.16.0,0.324995,-1.43051E-05,-0.150018,13.5,0.474998,
```

```
-5.72205E-06,-0.450009,0.0,0.0,0.0,0.0;                                        313P  187
112,3,1,3,2,0.0,0.0,0.0,-0.0625,15.0,-0.312501,                               315P  188
1.43051E-06,0.0624995,0.0,0.0,0.0,0.0,-0.0625,0.0375,0.0625,                   315P  189
14.75,-0.125,0.1875,-0.0625005,0.0,0.0,0.0,4.5,0.375,-0.1875,0.0,             315P  190
0.375,14.75,0.062499,-2.86102E-06,-0.375003,0.0,0.0,0.0,0.0,0.0;              315P  191
112,3,1,3,8,0.0,1.0,2.0,3.0,4.0,5.0,6.0,7.0,8.0,7.5,0.870857,                 317P  192
7.15256E-07,-0.120858,11.5,-0.249078,-2.86102E-06,-9.19183E-04,               317P  193
0.0,0.0,0.0,0.0,8.25,0.508285,-0.362573,0.104289,11.25,                       317P  194
-0.251841,-2.76041E-03,4.60148E-03,0.0,0.0,0.0,0.0,8.5,                       317P  195
0.0960054,-0.0497065,-0.0462993,11.0,-0.243557,0.011044,                      317P  196
-0.0174875,0.0,0.0,0.0,0.0,8.5,-0.142305,-0.188604,0.0809096,                 317P  197
10.75,-0.273932,-0.0414186,0.065352,0.0,0.0,0.0,0.0,8.25,                     317P  198
-0.276785,0.0541244,-0.0273385,10.5,-0.160713,0.154637,                       317P  199
6.07554E-03,0.0,0.0,0.0,0.0,8.0,-0.250552,-0.0278912,0.0284429,               317P  200
10.5,0.166788,0.172864,-0.089653,0.0,0.0,0.0,7.75,-0.221006,                  317P  201
0.0574377,0.163568,10.75,0.243557,-0.0960951,0.102539,0.0,0.0,                317P  202
0.0,0.0,7.75,0.384573,0.548141,0.182714,11.0,0.358984,0.211522,               317P  203
-0.070507,0.0,0.0,0.0,0.0,8.5,0.932714,-1.40071E-06,-1.09628,                 317P  204
11.5,0.570508,2.87592E-06,-0.423042,0.0,0.0,0.0,0.0;                          317P  205
126,10,7,0,1,0,0.0,0.0,0.0,0.0,0.0,0.0,1.0,2.0,3.0,                           319P  206
4.0,4.0,4.0,4.0,4.0,4.0,4.0,4.0,1.0,1.0,1.0,1.0,1.0,1.0,1.0,1.0,              319P  207
1.0,1.0,1.0,12.0,8.5,-0.433012,11.8837,8.5,-0.433012,11.648,                  319P  208
8.53158,-0.378307,11.3681,8.66514,-0.146989,11.3783,8.95908,                  319P  209
0.362137,12.0,9.20586,0.789574,12.6217,8.95908,0.362144,12.6319,              319P  210
8.66513,-0.146992,12.352,8.53158,-0.378309,12.1163,8.5,                       319P  211
-0.433012,12.0,8.5,-0.433012,0.0,4.0;                                         319P  212
0,10,7,0,1,0,0.0,0.0,0.0,0.0,0.0,0.0,1.0,2.0,3.0,                             321P  213
4.0,4.0,4.0,4.0,4.0,4.0,4.0,4.0,1.0,1.0,1.0,1.0,1.0,1.0,1.0,1.0,              321P  214
1.0,1.0,1.0,16.5,9.25,0.0,16.4418,9.25,0.0,16.324,9.21842,0.0,                321P  215
16.184,9.08486,0.0,16.1892,8.79092,0.0,16.5,8.54414,0.0,16.8108,              321P  216
8.79091,0.0,16.816,9.08487,0.0,16.676,9.21842,0.0,16.5582,9.25,               321P  217
0.0,16.5,9.25,0.0,0.0,4.0;                                                    321P  218
0,10,7,0,1,0,0.0,0.0,0.0,0.0,0.0,0.0,1.0,2.0,3.0,                             323P  219
4.0,4.0,4.0,4.0,4.0,4.0,4.0,4.0,1.0,1.0,1.0,1.0,1.0,1.0,1.0,1.0,              323P  220
1.0,1.0,1.0,14.0,9.5,0.0,13.8837,9.5,0.0,13.648,9.43683,0.0,                  323P  221
13.3681,9.16973,0.0,13.3783,8.58184,0.0,14.0,8.08828,0.0,                     323P  222
14.6217,8.58184,0.0,14.6319,9.16973,0.0,14.352,9.43683,0.0,                   323P  223
14.1163,9.5,0.0,14.0,9.5,0.0,0.0,4.0;                                         323P  224
126,7,5,0,1,0,0.0,0.0,0.0,0.0,0.0,0.0,1.0,2.0,3.0,3.0,3.0,3.0,3.0,            325P  225
3.0,3.0,1.0,1.0,1.0,1.0,1.0,1.0,1.0,1.0,5.5,9.0,0.0,5.50606,                  325P  226
9.12841,0.0,5.56363,9.30454,0.0,5.78636,9.32671,0.0,6.21364,                  325P  227
8.9858,0.0,6.43636,8.89545,0.0,6.49394,8.94659,0.0,6.5,9.0,0.0,0.0,           325P  228
0.0,3.0;                                                                      325P  229
0,3,1,3,9,0.0,1.0,2.0,3.0,4.0,5.0,6.0,7.0,8.0,9.0,6.5,                        327P  230
-0.049942,-7.15256E-07,-2.09272E-03,7.125,-0.0298276,                         327P  231
-2.14577E-06,2.61668E-03,0.499997,5.72205E-06,4.47035E-08,                    327P  232
-1.43299E-06,6.44797,-0.0562216,-6.27887E-03,-2.88339E-03,                    327P  233
7.09779,-0.0219818,7.84791E-03,2.93299E-03,0.500001,1.51247E-06,              327P  234
-4.25428E-06,1.9744E-06,6.38258,-0.0774295,-0.0149291,                        327P  235
2.79427E-04,7.08658,2.51293E-03,0.0166469,1.67457E-03,0.5,                    327P  236
-1.07288E-06,1.66893E-06,-6.75519E-03,6.2905,-0.106449,                       327P  237
-0.0140908,-9.71365E-03,7.10742,0.0408304,0.0216706,3.77202E-03,              327P  238
0.5,2.38419E-07,-3.57628E-07,1.19209E-07,6.16025,-0.163772,                   327P  239
-0.0432317,0.0174736,7.17369,0.0954876,0.0329866,-0.0167644,0.5,              327P  240
-1.19209E-07,0.0,4.96705E-08,5.97072,-0.197014,9.18913E-03,                   327P  241
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Right-margin annotations:

Description	Type	Column
parametric spline for 102	112	
parametric spline	112	
bottom rational b-spline for 128 Form 3	126 F 0	
rational b-spline	126 F 0	

Data		Pointer	Line	Description
6.05456E-03,7.2854,0.111168,-0.0173066,-0.0118829,0.5,		327P	242	
2.98023E-08,1.49012E-07,-6.95388E-08,5.78815,-0.161273,		327P	243	
0.0273528,-5.58297E-04,7.3673B,0.040906,-0.0529552,3.09523E-03,		327P	244	
0.5,1.19209E-07,-5.96046E-08,-1.49012E-08,5.65367,-0.108242,		327P	245	
0.0256779,-5.22304E-03,7.35842,-0.0557187,-0.0436695,		327P	246	
6.35568E-03,0.5,-4.47035E-08,-1.04308E-07,8.19564E-06,5.56588,		327P	247	
-0.0725551,0.0100008B,-3.33579E-03,7.26539,-0.123991,-0.0246024,		327P	248	
8.20128E-03,0.5,-7.45058E-09,1.41561E-07,-3.22859E-08,5.5,		327P	249	
-0.0625448,2.86149E-06,-0.0200148,7.125,-0.148592,2.86289E-06,		327P	250	
0.0492077,0.5,1.78814E-07,8.9407E-08,-1.93715E-07;		327P	251	
126,7,5,0,1,0.0,0.0,0.0,0.0,0.0,0.0,0.1,0.2,0.3,0.3,0.3,0.3,3.0,	126 F 0	329P	252	top rational b-spline for 128 Form 0
3.0,3.0,1.0,1.0,1.0,1.0,1.0,1.0,1.0,1.0,1.0,7.5,9.5,1.0,7.50606,		329P	253	
9.62841,1.0,7.56363,9.80454,1.0,7.78636,9.82671,1.0,8.21364,		329P	254	
9.4858,1.0,8.43636,9.39545,1.0,8.49394,9.44659,1.0,8.5,9.5,1.0,		329P	255	
0.0,3.0;		329P	256	
126,7,5,0,1,0.0,0.0,0.0,0.0,0.0,0.0,0.1,0.2,0.3,0.3,0.3,0.3,3.0,	126 F 0	331P	257	bottom rational b-spline for 128 Form 0
3.0,3.0,1.0,1.0,1.0,1.0,1.0,1.0,1.0,1.0,1.0,7.5,8.75,0.0,7.50606,		331P	258	
8.87841,0.0,7.56363,9.05454,0.0,7.78636,9.07671,0.0,8.21364,		331P	259	
8.7358,0.0,8.43636,8.64545,0.0,8.49394,8.69659,0.0,8.5,8.75,0.0,		331P	260	
0.0,3.0;		331P	261	
126,10,7,0,1,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.1,0.2,0.3,0.3,0.3,3.0,	126 F 0	333P	262	top rational b-spline for 128 Form 3
4.0,4.0,4.0,4.0,4.0,4.0,0.1,0.1,0.1,0.1,0.1,0.1,1.0,1.0,1.0,1.0,1.0,1.0,		333P	263	
1.0,1.0,1.0,12.0,9.49103,-0.716507,11.9418,9.49103,-0.716507,		333P	264	
11.824,9.50682,-0.689154,11.684,9.57359,-0.573494,11.6892,		333P	265	
9.72056,-0.318937,12.0,9.84396,-0.105211,12.3108,9.72057,		333P	266	
-0.318927,12.3159,9.57359,-0.573499,12.176,9.50682,-0.689155,		333P	267	
12.0582,9.49103,-0.716507,12.0,9.49103,-0.716507,0.0,4.0;		333P	268	
126,10,7,0,1,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.1,0.2,0.3,0.0,	126 F 0	335P	269	top rational b-spline for 128 Form 2
4.0,4.0,4.0,4.0,4.0,4.0,0.1,0.1,0.1,0.1,0.1,0.1,1.0,1.0,1.0,1.0,1.0,1.0,		335P	270	
1.0,1.0,1.0,10.0,9.36603,-0.933013,9.88366,9.36603,-0.933013,		335P	271	
9.64802,9.39761,-0.878308,9.3681,9.53116,-0.64699,9.37832,		335P	272	
9.82511,-0.137863,10.0,10.0719,0.289574,10.6217,9.82511,		335P	273	
-0.137856,10.6319,9.53116,-0.646992,10.352,9.39761,-0.87831,		335P	274	
10.1163,9.36603,-0.933013,10.0,9.36603,-0.933013,0.0,4.0;		335P	275	
126,10,7,0,1,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.1,0.2,0.3,0.0,	126 F 0	337P	276	bottom rational b-spline for 128 Form 2
4.0,4.0,4.0,4.0,4.0,4.0,0.1,0.1,0.1,0.1,0.1,0.1,1.0,1.0,1.0,1.0,1.0,1.0,		337P	277	
1.0,1.0,1.0,10.0,8.5,-0.433013,9.88366,8.5,-0.433013,		337P	278	
8.53159,-0.378308,9.3681,8.6514,-0.14699,9.37832,8.95908,		337P	279	
0.362137,10.0,9.20586,0.789574,10.6217,8.95909,0.362144,10.6319,		337P	280	
8.66513,-0.146992,10.352,8.53158,-0.37831,10.1163,8.5,-0.433013,		337P	281	
10.0,8.5,-0.433013,0.0,4.0;		337P	282	
112,2,1,3,2,0.0,0.1,0.2,0.17.5,0.0,0.5,0.0,9.0,2.0,-1.5,0.0,1.0,	112	339P	283	top parametric spline for 128 Form 9
0.0,0.0,0.0,18.0,1.0,-0.5,0.0,9.5,-1.0,0.5,0.0,1.0,0.0,0.0,0.0,0.0;		339P	284	
18.5,0.0,-1.0,0.0,9.0,0.0,1.0,0.0,0.0,0.0;		339P	285	
112,2,1,3,2,0.0,0.1,0.2,0.17.5,0.0,0.5,0.0,8.5,2.0,-1.5,0.0,0.0,	112	341P	286	bottom parametric spline fc= 128 Form 9
0.0,0.0,0.0,18.0,1.0,-0.5,0.0,9.0,-1.0,0.5,0.0,0.0,0.0,0.0,0.0;		341P	287	
18.5,0.0,-1.0,0.0,8.5,0.0,1.0,0.0,0.0,0.0,0.0;		341P	288	
112,3,1,3,0.0,0.1,0.2,0.3,0.5,5.0,0.166669,-1.43051E-06,0.0833333,	112	343P	289	top parametric spline for 144
7.5,0.400002,-4.29153E-06,-0.149998,1.0,0.0,0.0,0.0,5.75,		343P	290	
0.41666,0.249998,-0.166665,7.75,-0.0500009,-0.449999,0.25,1.0,		343P	291	
0.0,0.0,0.0,6.25,0.416667,-0.249998,0.0833316,7.5,-0.199999,		343P	292	
0.300001,-0.100003,1.0,0.0,0.0,0.0,6.5,0.166666,-5.72205E-06,		343P	293	
0.49999,7.5,0.0999956,-1.432E-05,-0.600017,1.0,0.0,0.0,0.0;		343P	294	
112,3,1,3,0.0,0.1,0.2,0.3,0.5,5.0,0.166669,-1.43051E-06,0.0833333,	112	345P	295	bottom parametric spline for 144
6.75,0.400002,-4.29153E-06,-0.149990,0.0,0.0,0.0,0.0,0.0,5.75,		345P	296	

-5.72205E-06,-0.450009,0.0,0.0,0.0,0.0,0.0;
112,3,1,3,2,0.0,1.0,2.0,4.0,0.5625,0.0,-0.0625,15.0,-0.312501,
1.43051E-06,0.0624995,0.0,0.0,0.0,0.0,4.5,0.375,-0.1875,0.0625,
14.75,-0.125,0.1875,-0.0625005,0.0,0.0,0.0,0.0,4.75,-0.1875,0.0,
0.375,14.75,0.062499,-2.86102E-06,-0.375003,0.0,0.0,0.0,0.0;
112,3,1,3,8,0.0,1.0,2.0,3.0,4.0,5.0,6.0,7.0,8.0,7.5,0.870857,
7.15256E-07,-0.120858,11.5,-0.249078,-2.86102E-06,-9.19183E-04,
0.0,0.0,0.0,0.0,8.25,0.508285,-0.362573,0.104289,11.25,
-0.251841,-2.76041E-03,4.60148E-03,0.0,0.0,0.0,0.0,8.5,
0.0960054,-0.0497065,-0.0462993,11.0,-0.243557,0.011044,
-0.0174875,0.0,0.0,0.0,0.0,8.5,-0.142305,-0.188604,0.0809096,
10.75,-0.273932,-0.0414186,0.065352,0.0,0.0,0.0,0.0,8.25,
-0.276785,0.0541244,-0.0273385,10.5,-0.160713,0.154637,
6.07554E-03,0.0,0.0,0.0,8.0,-0.250552,-0.0278912,0.0284429,
10.5,0.166788,0.172864,-0.089653,0.0,0.0,0.0,7.75,-0.221006,
0.0574377,0.163568,10.75,0.243557,-0.0960951,0.102539,0.0,0.0,0.0,
0.0,0.0,7.75,0.384573,0.548141,-0.182714,11.0,0.358984,0.211522,
-0.070507,0.0,0.0,0.0,8.5,0.932714,-1.40071E-06,-1.09628,
11.5,0.570508,2.87592E-06,-0.423042,0.0,0.0,0.0,0.0;
126,10,7,0,1,0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,1.0,2.0,3.0,
4.0,4.0,4.0,4.0,4.0,4.0,4.0,1.0,1.0,1.0,1.0,1.0,1.0,1.0,1.0,
1.0,1.0,12.0,8.5,-0.433012,11.8837,8.5,-0.433012,11.648,
8.53158,-0.378307,11.3681,8.66514,-0.146989,11.3783,8.95908,
0.362137,12.0,9.20586,0.789574,12.6217,8.95908,0.362144,12.6319,
8.66513,-0.146992,12.352,8.53158,-0.378309,12.1163,8.5,
-0.433012,12.0,8.5,-0.433012,0.0,4.0;
0,10,7,0,1,0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,1.0,2.0,3.0,
4.0,4.0,4.0,4.0,4.0,4.0,4.0,1.0,1.0,1.0,1.0,1.0,1.0,1.0,1.0,
1.0,1.0,16.5,9.25,0.0,16.4418,9.25,0.0,16.324,9.21842,0.0,
16.184,9.08486,0.0,16.1892,8.79092,0.0,16.5,8.54414,0.0,16.8108,
8.79091,0.0,16.816,9.08487,0.0,16.676,9.21842,0.0,16.5582,9.25,
0.0,16.5,9.25,0.0,0.0;
0,10,7,0,1,0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,1.0,2.0,3.0,
4.0,4.0,4.0,4.0,4.0,4.0,4.0,1.0,1.0,1.0,1.0,1.0,1.0,1.0,1.0,
1.0,1.0,14.0,9.5,0.0,13.8837,9.5,0.0,13.648,9.43683,0.0,
13.3681,9.16973,0.0,13.3783,8.58184,0.0,14.0,8.08828,0.0,
14.6217,8.58184,0.0,14.6319,9.16973,0.0,14.352,9.43683,0.0,
14.1163,9.5,0.0,14.0,9.5,0.0,0.0;
126,7,5,0,1,0,0.0,0.0,0.0,0.0,0.0,0.0,1.0,2.0,3.0,3.0,3.0,3.0,3.0,
3.0,0.1,0.1,1.0,1.0,1.0,1.0,1.0,5.0,9.0,0.0,5.50606,
9.12841,0.0,5.56363,9.30454,0.0,5.78636,9.32671,0.0,6.21364,
8.9858,0.0,6.43636,8.89545,0.0,6.49394,8.94659,0.0,6.5,9.0,0.0,
0.0,3.0;
0,3,1,3,9,0.0,1.0,2.0,3.0,4.0,5.0,6.0,7.0,8.0,9.0,6.5,
-0.049942,-7.15256E-07,-2.09272E-03,7.125,-0.0298276,
-2.14577E-06,2.61568E-03,0.499997,5.72205E-06,4.47035E-08,
-1.43299E-06,6.44797,-0.0562216,-6.27887E-03,-2.88339E-03,
7.09779,-0.0219818,7.84791E-03,2.93299E-03,0.500001,1.51247E-06,
-4.25428E-06,1.9744E-06,6.38258,-0.0774295,-0.0149291,
2.79427E-04,7.08658,2.51293E-03,0.0166469,1.67457E-03,0.5,
-1.07288E-06,1.66893E-06,-6.75519E-07,6.2905,-0.106449,
-0.0140908,-9.71365E-03,7.10742,0.0408304,0.0216706,3.77202E-03,
0.5,2.38419E-07,-3.57628E-07,1.19209E-07,6.16025,-0.163772,
-0.043217,0.0174736,7.17369,0.0954876,0.0329866,-0.0167644,0.5,
-1.19209E-07,0.0,4.96705E-08,5.97072,-0.197814,9.18913E-03,

		line	code
parametric spline for 102	112	187	313P
		188	315P
		189	315P
		190	315P
		191	315P
parametric spline	112	192	317P
		193	317P
		194	317P
		195	317P
		196	317P
		197	317P
		198	317P
		199	317P
		200	317P
		201	317P
		202	317P
		203	317P
		204	317P
		205	317P
bottom rational b-spline for 128 Form 3	126 F 0	206	319P
		207	319P
		208	319P
		209	319P
		210	319P
		211	319P
		212	319P
		213	321P
		214	321P
		215	321P
		216	321P
		217	321P
		218	321P
		219	323P
		220	323P
		221	323P
		222	323P
		223	323P
		224	323P
rational b-spline	126 F 0	225	325P
		226	325P
		227	325P
		228	325P
		229	325P
		230	327P
		231	327P
		232	327P
		233	327P
		234	327P
		235	327P
		236	327P
		237	327P
		238	327P
		239	327P
		240	327P
		241	327P

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6.05456E-03,7.2854,0.111168,-0.0173066,-0.0118829,0.5,                         327P    242
2.98023E-08,1.49012E-07,-6.95388E-08,5.78815,-0.161273,                        327P    243
0.0273528,-5.58297E-04,7.36738,0.040906,-0.0529552,3.09523E-03,                327P    244
0.5,1.19209E-07,-5.96046E-08,-1.49012E-08,5.65367,-0.108242,                   327P    245
0.0256779,-5.22304E-03,7.35842,-0.0557187,-0.0436695,                          327P    246
6.35568E-03,0.5,-4.47035E-08,-1.04308E-07,8.19564E-08,5.56588,                 327P    247
-0.0725551,0.0100008,-3.33579E-03,7.26539,-0.123991,-0.0246024,                327P    248
8.20128E-03,0.5,-7.45058E-09,1.41561E-07,-3.22859E-08,5.5,                     327P    249
-0.0625448,2.86149E-06,-0.0200148,7.125,-0.148592,2.86289E-06,                 327P    250
0.0492077,0.5,1.78814E-07,8.9407E-06,-1.93715E-07;                             327P    251

126,7,5,0,0,1,0,0,0.0,0.0,0.0,0.0,1.0,2.0,3.0,3.0,3.0,3.0,      126 F 0        329P    252
3.0,3.0,1.0,1.0,1.0,1.0,1.0,1.0,7.5,9.5,1.0,7.50606,                           329P    253
9.62841,1.0,7.56363,9.80454,1.0,7.70636,9.82671,1.0,8.21364,                   329P    254
9.4058,1.0,8.43636,9.39545,1.0,8.49394,9.44659,1.0,8.5,9.5,1.0,                329P    255
0.0,3.0;                                                                       329P    256

126,7,5,0,0,1,0,0,0.0,0.0,0.0,0.0,1.0,2.0,3.0,3.0,3.0,3.0,      126 F 0        331P    257
3.0,3.0,1.0,1.0,1.0,1.0,1.0,1.0,7.5,8.75,0.0,7.50606,                          331P    258
8.87841,0.0,7.56363,9.05454,0.0,7.78636,9.07671,0.0,8.21364,                   331P    259
8.7350,0.0,8.43636,8.64545,0.0,8.49394,8.69659,0.0,8.5,8.75,0.0,               331P    260
0.0,3.0;                                                                       331P    261

126,10,7,0,0,1,0,0,0.0,0.0,0.0,0.0,0.0,0.0,1.0,2.0,3.0,         126 F 0        333P    262
4.0,4.0,4.0,4.0,4.0,4.0,0.1,0.1,0.1,0.1,1.0,1.0,9.49103,-0.716507,             333P    263
1.0,1.0,1.0,12.0,9.49103,-0.716507,11.9418,9.49103,-0.716507,                  333P    264
11.824,9.50682,-0.689154,11.684,9.57359,-0.573494,11.6092,                     333P    265
9.72056,-0.318937,12.0,9.84396,-0.105211,12.3108,9.72057,                      333P    266
9.50682,-0.318927,12.3159,9.57359,-0.573499,12.176,9.50682,-0.689155,          333P    267
12.0582,9.49103,-0.716507,12.0,9.49103,-0.716507,0.0,4.0;                      333P    268

126,10,7,0,0,1,0,0,0.0,0.0,0.0,0.0,0.0,0.0,1.0,2.0,3.0,         126 F 0        335P    269
4.0,4.0,4.0,4.0,4.0,4.0,0.1,0.1,0.1,0.1,1.0,1.0,9.36603,-0.933013,             335P    270
1.0,1.0,1.0,10.0,9.36603,-0.933013,9.00366,9.36603,-0.933013,                  335P    271
9.64802,9.39761,-0.078308,9.3601,9.53116,-0.64699,9.37032,                     335P    272
9.82511,-0.137863,10.0,10.0719,0.289574,10.6217,9.82511,                       335P    273
-0.137856,10.6319,9.53116,-0.646992,10.352,9.39761,-0.87831,                   335P    274
10.1163,9.36603,-0.933013,10.0,9.36603,-0.933013,0.0,4.0;                      335P    275

126,10,7,0,0,1,0,0,0.0,0.0,0.0,0.0,0.0,0.0,1.0,2.0,3.0,         126 F 0        337P    276
4.0,4.0,4.0,4.0,4.0,4.0,0.1,0.1,0.1,0.1,1.0,1.0,1.0,1.0,                       337P    277
1.0,1.0,1.0,10.0,8.5,-0.433013,9.88366,8.5,-0.433013,9.64802,                  337P    278
8.53159,-0.378300,9.3681,8.66514,-0.14699,9.37832,0.95908,                     337P    279
0.362137,10.0,9.20586,0.789574,10.6217,0.95909,0.362144,10.6319,               337P    280
8.66513,-0.146992,10.352,8.53158,-0.37831,10.1163,8.5,-0.433013,               337P    281
10.0,8.5,-0.433013,0.0,4.0;                                                    337P    282

112,2,1,3,2,0,0.1,0.2,0.17.5,0.0,0.5,0.0,9.0,2.0,-1.5,0.0,1.0,  112            339P    283
0.0,0.0,0.0,18.0,1.0,-0.5,0.0,9.5,-1.0,0.0,5.0,1.0,0.0,0.0,0.0,                339P    284
18.5,0.0,-1.0,0.0,9.0,0.0,0.0,1.0,0.0,0.0,0.0;                                 339P    285
112,2,1,3,2,0,0.1,0.2,0.17.5,0.0,0.5,0.0,8.5,2.0,-1.5,0.0,0.0,  112            341P    286
0.0,0.0,0.0,18.0,1.0,-0.5,0.0,9.0,-1.0,0.0,5.0,0.0,0.0,0.0,0.0,                341P    287
18.5,0.0,-1.0,0.0,8.5,0.0,1.0,0.0,0.0,0.0,0.0,0.0;                             341P    288
112,3,1,3,3,0,0.1,0.2,0.3,0.5,5.0,-0.14998,-1.43051E-06,0.0833333,  112        343P    289
7.5,0.400002,-4.29153E-06,-0.14998,1.0,0.0,0.0,0.0,5.75,                       343P    290
0.416666,0.24999B,-0.166665,7.75,-0.0500009,-0.449999,0.25,1.0,                343P    291
0.0,0.0,0.0,6.25,0.416667,-0.249998,0.0833316,7.5,-0.199999,                   343P    292
0.300001,-0.100003,1.0,0.0,0.0,0.0,6.5,0.166666,-5.72205E-06,                  343P    293
0.49999,7.5,0.0999956,-1.432E-05,-0.600017,1.0,0.0,0.0,0.0;                    343P    294
112,3,1,3,3,0,0.1,0.2,0.3,0.5,5.0,0.16666,-1.43051E-06,0.0833333,  112         345P    295
6.75,0.400002,-4.29153E-06,-0.14999B,0.0,0.0,0.0,0.0,5.75,                     345P    296
```

top rational b-spline for 128 Form 0

bottom rational b-spline for 128 Form 0

top rational b-spline for 128 Form 3

top rational b-spline for 128 Form 2

bottom rational b-spline for 128 Form 0

top parametric spline for 128 Form 9

bottom parametric spline for 128 Form 9

top parametric spline for 144

bottom parametric spline for 144

104

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0.416666,0.249998,-0.166665,7.0,-0.0500009,-0.449999,0.25,0.0,
0.0,0.0,0.0,6.25,0.416667,-0.249998,0.0833316,6.75,-0.199999,
0.300001,-0.100003,0.0,0.0,0.0,0.0,6.5,0.166666,-5.72205E-06,
0.49999,6.75,0.0999956,-1.432E-05,-0.600017,0.0,0.0,0.0,0.0;
0.3,1,3.5,0.0,0.1,0.2,0.3,0.4,0.5,0.4,15353,0.114716,0.0,
-0.0265429,6.80265,0.106401,-1.43051E-06,0.0270039,4.73196E-05,
0.224783,1.49012E-08,0.0180701,4.2417,0.0350869,-0.0796287,
1.49393E-03,6.93608,0.1875,0.0811002,-0.0528591,0.2429,0.278993,
0.0542104,-0.0760615,4.19865,-0.119689,-0.0751469,0.0121375,
7.15103,0.191123,-0.0774772,-0.015979,0.500042,0.159229,
-0.173974,1.37706E-03,4.01595,-0.23357,-0.0387344,0.0571961,
7.24949,-0.0117681,-0.125414,0.0390046,0.406675,-0.184585,
-0.16984,0.0842352,3.80084,-0.139451,0.132854,-0.044284l,
7.15132,-0.145583,-8.40044E-03,2.79967E-03,0.216485,-0.27156,
0.0828652,-0.0276217,3.74996,-6.59538E-03,2.85357E-06,-0.265705,
7.00013,-0.153985,-2.86056E-06,0.016798,1.68452E-04,-0.188695,
5.58794E-08,-0.16573;
112,3,1,3,0.0,0.1,0.2,0.3,0.3.5,0.166669,-1.43051E-06,0.0833333,
7.5,0.400002,-4.29153E-06,-0.149998,1.0,0.0,0.0,0.0,0.3.75,
0.416666,0.249998,-0.166665,7.75,-0.0500009,-0.449999,0.25,1.0,
0.0,0.0,0.0,4.25,0.416667,-0.249998,0.0833316,7.5,-0.199999,
0.300001,-0.100003,1.0,0.0,0.0,0.0,4.5,0.166666,-5.72205E-06,
0.49999,7.5,0.0999956,-1.432E-05,-0.600017,1.0,0.0,0.0,0.0;
112,3,1,3,0.0,0.1,0.2,0.3,0.3.5,0.166669,-1.43051E-06,0.0833333,
6.75,0.400002,-4.29153E-06,-0.149998,0.0,0.0,0.0,0.3.75,
0.416666,0.249998,-0.166665,7.0,-0.0500009,-0.449999,0.25,0.0,
0.0,0.0,0.0,4.25,0.416667,-0.249998,0.0833316,6.75,-0.199999,
0.300001,-0.100003,0.0,0.0,0.0,0.0,4.5,0.166666,-5.72205E-06,
0.49999,6.75,0.0999956,-1.432E-05,-0.600017,0.0,0.0,0.0,0.0;
112,3,1,3,0.0,0.1,0.2,0.3,0.9.5,0.166669,-1.43051E-06,0.0833333,
11.5,0.400002,-4.29153E-06,-0.149998,1.0,0.0,0.0,0.0,0.9.75,
0.416666,0.249998,-0.166665,11.75,-0.0500009,-0.449999,0.25,1.0,
0.0,0.0,0.10.25,0.416667,-0.249998,0.0833316,11.5,-0.199999,
0.300001,-0.100003,1.0,0.0,0.0,0.10.5,0.166666,-5.72205E-06,
0.49999,11.5,0.0999956,-1.432E-05,-0.600017,1.0,0.0,0.0,0.0;
112,3,1,3,0.0,0.1,0.2,0.3,0.9.5,0.166669,-1.43051E-06,0.0833333,
10.75,0.400002,-4.29153E-06,-0.149998,0.0,0.0,0.0,0.9.75,
0.416666,0.249998,-0.166665,11.0,-0.0500009,-0.449999,0.25,0.0,
0.0,0.0,0.10.25,0.416667,-0.249998,0.0833316,10.75,-0.199999,
0.300001,-0.100003,0.0,0.0,0.0,0.10.5,0.166666,-5.72205E-06,
0.49999,10.75,0.0999956,-1.432E-05,-0.600017,0.0,0.0,0.0,0.0;
212,1,6,0.936,0.156,1,1.5708,0.0,0.0,0.7.85,1.42,0.0,6HR .500;
214,2,0.15,0.05,0.0,7.37127,0.985071,7.5,1.5,7.75,1.5;
222,357,359,7.25,0.5;
212,1,4,0.6084,0.156,1,1.5708,0,0,3.58,1.19,0.0,
4H.000;
214,1,0.0,0.0,0.0,3.5,0.5936,3.5,1.0936;
218,363,365;
212,1,5,0.7176,0.156,1,1.5708,0.0,0.0,1.64,1.17,0.0,5H1.000;
214,1,0.15,0.05,0.0,1.5,1.25,1.3,1.25;
214,1,0.15,0.05,0.0,2.5,1.25,2.7,1.25;
106,1,3,0.0,1.5,0.5936,1.5,1.37675;
106,1,3,0.0,2.5,0.5,2.5,0.5936,2.5,1.37675;
216,369,371,373,375,377;
212,1,4,0.6084,0.156,1,1.5708,0,0,4.33,1.19,0.0,
```

Seq	Pointer	Code	Description
297	345P		
298	345P		
299	345P		
300	345P		
301	347P		
302	347P		
303	347P		
304	347P		
305	347P		
306	347P		
307	347P		
308	347P		
309	347P		
310	347P		
311	347P		
312	347P		
313	347P		
314	349P	112	top parametric spline for 142
315	349P		
316	349P		
317	349P		
318	349P		
319	349P		
320	351P	112	bottom parametric spline for 142
321	351P		
322	351P		
323	351P		
324	351P		
325	351P		
326	353P	112	top parametric spline for 114
327	353P		
328	353P		
329	353P		
330	353P		
331	353P		
332	355P	112	bottom parametric spline for 114
333	355P		
334	355P		
335	355P		
336	355P		
337	355P		
338	357P	212 F 0	text for 222
339	359P	214 F 2	leader for 222
340	361P	222	radius dimension
341	363P	212 F 0	text for left 218
342	363P		
343	365P	214 F 4	leader for left 218
344	367P	218	left ordinate dimension
345	369P	212 F 0	text for 216
346	371P	214 F 2	left leader for 216
347	373P	214 F 2	right leader for 216
348	375P	106 F 40	left witness line for 216
349	377P	106 F 40	right witness line for 216
350	379P	216	linear dimension
351	381P	212 F 0	text for right 218

```
4H.750;
214,1,0.0,0.0,0.0,4.25,0.5936,4.25,1.0936;
218,381,383;
212,2,1,0.234,0.156,1001,1.5708,0.0,0.0,0.9,7.3,0.0,1Hn,
4,0.6084,0.156,1,1.5708,0.0,0.0,0.10.0965,7.29825,0.0,4H.500;
214,1,0.15,0.05,0.0,9.72361,7.1118,9.5,7.0;
214,2,0.15,0.05,0.0,9.27639,6.8882,9.5,7.0,9.9015,7.20075;
206,387,389,391,9.5,7.0;
212,2,5,0.78,0.156,1,1.5708,0.0,0.0,0.7.9,7.1,0.0,5H45.00,1,
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214,1,0.15,0.05,0.0,8.08489,7.58489,8.29001,7.309;
214,1,0.15,0.05,0.0,8.43072,6.75,8.41225,6.958;
106,1,3,0.0,7.5,7.13237,7.56619,7.06619,8.17452,7.67452;
106,1,3,0.0,7.5,6.75,7.5936,6.75,8.55747,6.75;
202,395,401,403,7.25,6.75,1.18072,399,397;
212,1,4,0.6084,0.156,1,1.5708,0.0,0.0,0.5.73,1.33,0.0,4H.000;
100,0.0,6.0,1.40764,6.31404,1.40764,6.31404,1.40764;
214,3,0.0,0.0,0.0,6.0,0.5936,6.0,1.0936,6.0,1.0936;
220,407,411,409;
212,1,5,0.575,0.125,1,1.5708,0.0,0.0,18.2125,12.9375,0.0,5H1.000
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214,1,0.15,0.05,0.0,18.5,13.5,18.5,13.1406;
214,1,0.15,0.05,0.0,18.5,12.5,18.5,12.8594;
106,1,5,0.,17.52,13.5,17.6,13.5,17.75,13.5,10.25,13.5,10.6,13.5;
106,1,5,0.0,17.52,12.5,17.6,12.5,18.6,12.5;
216,415,417,419,421,423;
102,4,183,177,179,181;
230,427,1,17.5,1.21716,0.0,0.2,0.785398,0;
0,4,295,297,299,301;
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Seq	P	Entity	Description
352	381P	214 F 4	leader for right 218
353	383P	218	right ordinate dimension
354	385P	212 F 0	text for 206
355	387P		
356	387P		
357	389P	214 F 2	right leader for 206
358	391P	214 F 2	left leader for 206
359	393P	206	diameter dimension
360	395P	212 F 0	text for 202
361	395P		
362	397P	214 F 2	top leader for 202
363	399P	214 F 2	bottom leader for 202
364	401P	106 F 40	top witness line for 202
365	403P	106 F 40	bottom witness line for 202
366	405P	202	angular dimension
367	407P	212 F 0	text for 220
368	409P	100	circular arc for 220
369	411P	214 F 4	leader for 220
370	413P	220	point dimension
371	415P	212 F 0	text for 106 Form 40
372	415P		
373	417P	214 F 2	top leader for 106 Form 40
374	419P	214 F 2	bottom leader for 106 Form 40
375	421P	106 F 40	top witness line
376	423P	106 F 40	bottom witness line
377	425P	216	linear dimension for 106 Form 40
378	427P	102	composite curve for 230
379	429P	230	sectioned area
380	431P		
381	433P		
382	435P		
383	437P		
384	439P		
385	441P		
386	443P		
387	445P		
388	447P		
389	449P		
390	451P		
391	453P		
392	455P		
393	457P		
394	459P		
395	461P		
396	463P		
397	465P		
398	467P		
399	469P		
400	471P		
401	473P		
402	475P		
403	477P		
404	479P		
405	481P		
406	483P		

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Right-hand index column (labels):

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485P  487P  489P  491P  493P  495P  497P  499P  501P  503P
505P  507P  509P  511P  513P  515P  517P  519P  521P  523P
525P  527P  529P  531P  533P  535P  537P  539P  541P  543P
545P  547P  549P  551P  553P  555P  557P  559P  561P  563P
565P  567P  569P  571P  573P  575P  577P  579P  581P  583P
585P  587P  589P  591P
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Right-hand index column (numbers):

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407  408  409  410  411  412  413  414  415  416
417  418  419  420  421  422  423  424  425  426
427  428  429  430  431  432  433  434  435  436
437  438  439  440  441  442  443  444  445  446
447  448  449  450  451  452  453  454  455  456
457  458  459  460  461
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214,1,0.15,0.05,0.0,19.5,5.0,20.5,5.0;
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212,1,6,0.618333,0.125,1,1.5708,0.0,0.0,0.13.5,7.125,0.0,6HSIMPLE;
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D#	Seq	Type	Form	Description
462	593P			
463	593P			
464	595P			
465	597P			
466	599P			
467	601P			
468	603P			
469	605P			
470	607P			
471	609P			
472	611P			
473	613P			
474	615P			
475	617P			
476	619P			
477	621P			
478	623P			
479	625P			
480	627P			
481	629P			
482	631P			
483	633P			
484	635P			
485	637P			
486	639P			
487	641P			
488	643P	214	F 1	leader - wedge
489	645P			
490	647P	212	F 0	text "A" for 106 Form 40
491	649P	212	F 0	text for 228 Form 3
492	649P			
493	651P	106	F 63	simple closed area for 228 Form 3
494	651P			
495	653P	228	F 3	symbol - feature control
496	655P	212	F 0	note - simple horizontal
497	657P			
498	659P	214	F 2	leader - triangle
499	661P			
500	663P			
501	665P	214	F 3	leader - filled triangle
502	667P			
503	669P			
504	671P	214	F 4	leader - no arrow
505	673P			
506	675P			
507	677P	214	F 5	leader - circle
508	679P			
509	681P			
510	683P	214	F 6	leader - filled circle
511	685P			
512	687P			
513	689P	214	F 9	leader - slash
514	691P			
515	693P			
516	695P	214	F 8	leader - filled rectangle

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Data		P	Directory	Description
0,693,1,695;	517	697P		
0,1,1,0.1404,0.156,1,1.5708,0.0,0.0,18.5975,2.922,0.0,1H ;	518	699P		
214,1,0.1,0.1,0.0,0.17.5,3.0,18.5,3.0;	519	701P	214 F 10	leader - integral sign
0,699,1,701;	520	703P		
212,1,5,0.9204,0.156,1,1.5708,0.0,0.0,11.8,7.2,0.0,5HLABEL;	521	705P	212 F 0	text for 210
214,2,0.15,0.05,0.0,11.5,6.75,11.46,7.25,11.75,7.25;	522	707P	214 F 2	leader for 210
210,705,1,707;	523	709P	210	general label
212,1,3,0.5304,0.156,1001,1.5708,0.0,0.0,11.83,1.08,0.0,3H-C-;	524	711P	212 F 0	text for 228 Form 1
106,1,5,0.0,11.75,1.0,11.75,1.312,12.3584,1.312,12.3584,1.0,	525	713P	106 F 63	simple closed area for 228 Form 1
11.75,1.0;	526	713P		
228,711,1,713,0;	527	715P	228 F 1	symbol - datum feature
0,1,1,0.1404,0.156,1,1.5708,0.0,0.0,14.0866,0.90071,0.0,1H ;	528	717P		
214,1,0.15,0.05,0.0,13.625,0.625,13.9911,0.97871;	529	719P	214 F 2	leader for 228 Form 2
0,717,1,719;	530	721P		
212,1,2,0.3276,0.156,1,1.5708,0.0,0.0,14.125,1.0,0.0,2HA2;	531	723P	212 F 0	text for 228 Form 2
212,1,18,1.295,0.07,1,1.5708,0.0,0.0,1.3525,14.25,0.0,18HCIRCULA	532	725P	212 F 0	identifier for 100
R ARC (100);	533	725P		
212,1,2,0.3588,0.156,1,1.5708,0.0,0.0,9.875,0.75,0.0,2HAB;	534	727P	212 F 0	text for 228 Form 0
212,1,21,1.547,0.07,1,1.5708,0.0,0.0,3.2265,14.25,0.0,21HCOMPOSI	535	729P	212 F 0	identifier for 102
TE CURVE (102);	536	729P		
212,2,19,1.477,0.07,1,1.5708,0.0,0.0,5.2615,14.25,0.0,19HCONIC A	537	731P	212 F 0	Identifier for 104 Form 0
RC - GENERAL,12,0.84,0.07,1,1.5708,0.0,0.0,5.58,14.145,0.0,12H(1	538	731P		
04 FORM 0);	539	731P		
212,2,19,1.449,0.07,1,1.5708,0.0,0.0,7.2755,14.25,0.0,19HCONIC A	540	733P	212 F 0	Identifier for 104 Form 1
RC - ELLIPSE,12,0.812,0.07,1,1.5708,0.0,0.0,7.594,14.145,0.0,12H	541	733P		
(104 FORM 1);	542	733P		
212,2,21,1.638,0.07,1,1.5708,0.0,0.0,9.181,14.25,0.0,21HCONIC AR	543	735P	212 F 0	Identifier for 104 Form 2
C - HYPERBOLA,12,0.833,0.07,1,1.5708,0.0,0.0,9.5835,14.145,0.0,	544	735P		
12H(104 FORM 2);	545	735P		
212,2,20,1.547,0.07,1,1.5708,0.0,0.0,11.2265,14.25,0.0,20HCONIC	546	737P	212 F 0	Identifier for 104 Form 3
ARC - PARABOLA,12,0.84,0.07,1,1.5708,0.0,0.0,11.58,14.145,0.0,	547	737P		
12H(104 FORM 3);	548	737P		
212,2,19,1.491,0.07,1,1.5708,0.0,0.0,13.2545,14.25,0.0,19HLINEAR	549	739P	212 F 0	Identifier for 106 Form 11
PLANAR CURVE,13,0.861,0.07,1,1.5708,0.0,0.0,13.5695,14.145,0.0,	550	739P		
13H(106 FORM 11);	551	739P		
212,2,18,1.407,0.07,1,1.5708,0.0,0.0,15.2965,14.25,0.0,18HCOORDI	552	741P	212 F 0	Identifier for 106 Form 12
NATE TRIPLES,13,0.882,0.07,1,1.5708,0.0,0.0,15.559,14.145,0.0,	553	741P		
13H(106 FORM 12);	554	741P		
212,2,15,1.204,0.07,1,1.5708,0.0,0.0,17.398,14.25,0.0,15HCENTERL	555	743P	212 F 0	Identifier for 106 Form 20
INE THRU,20,1.435,0.07,1,1.5708,0.0,0.0,17.2825,14.145,0.0,20HPO	556	743P		
INTS (106 FORM 20);	557	743P		
212,2,15,1.204,0.07,1,1.5708,0.0,0.0,19.398,14.25,0.0,15HCENTERL	558	745P	212 F 0	Identifier for 106 Form 21
INE THRU,21,1.526,0.07,1,1.5708,0.0,0.0,19.237,14.145,0.0,21HCEN	559	745P		
TERS (106 FORM 21);	560	745P		
212,2,10,0.742,0.07,1,1.5708,0.0,0.0,1.629,12.25,0.0,10HSECTION	561	747P	212 F 0	Identifier for 106 Form 31
31,13,0.889,0.07,1,1.5708,0.0,0.0,1.5555,12.145,0.0,13H(106 FORM	562	747P		
31);	563	747P		
212,2,10,0.763,0.07,1,1.5708,0.0,0.0,3.6185,12.25,0.0,10HSECTION	564	749P	212 F 0	Identifier for 106 Form 32
32,13,0.91,0.07,1,1.5708,0.0,0.0,3.545,12.145,0.0,13H(106 FORM	565	749P		
32);	566	749P		
212,2,10,0.77,0.07,1,1.5708,0.0,0.0,5.615,12.25,0.0,10HSECTION 3	567	751P	212 F 0	Identifier for 106 Form 33
3,13,0.917,0.07,1,1.5708,0.0,0.0,5.5415,12.145,0.0,13H(106 FORM	568	751P		
33);	569	751P		
212,2,10,0.77,0.07,1,1.5708,0.0,0.0,7.615,12.25,0.0,10HSECTION 3	570	753P	212 F 0	Identifier for 106 Form 34
4,13,0.917,0.07,1,1.5708,0.0,0.0,7.5415,12.145,0.0,13H(106 FORM	571	753P		

Code	Pointer	Line	212 F 0	Identifier
34);	753P	572		
212,2,10,0.77,0.07,1,1.5708,0.0,0.0,9.615,12.25,0.0,10HSECTION 3	755P	573	212 F 0	Identifier for 106 Form 35
5,13,0.917,0.07,1,1.5708,0.0,0.0,9.5415,12.145,0.0,13H(106 FORM	755P	574		
35);	755P	575		
212,2,10,0.77,0.07,1,1.5708,0.0,0.0,11.615,12.25,0.0,10HSECTION	757P	576	212 F 0	Identifier for 106 Form 36
36,13,0.917,0.07,1,1.5708,0.0,0.0,11.5415,12.145,0.0,13H(106 FOR	757P	577		
M 36);	757P	578		
212,2,10,0.77,0.07,1,1.5708,0.0,0.0,13.615,12.25,0.0,10HSECTION	759P	579	212 F 0	Identifier for 106 Form 37
37,13,0.917,0.07,1,1.5708,0.0,0.0,13.5415,12.145,0.0,13H(106 FOR	759P	580		
M 37);	759P	581		
212,2,10,0.777,0.07,1,1.5708,0.0,0.0,15.6115,12.25,0.0,10HSECTIO	761P	582	212 F 0	Identifier for 106 Form 38
N 38,13,0.924,0.07,1,1.5708,0.0,0.0,15.538,12.145,0.0,13H(106 FO	761P	583		
RM 38);	761P	584		
212,2,12,0.924,0.07,1,1.5708,0.0,0.0,17.538,12.25,0.0,12HWITNESS	763P	585	212 F 0	Identifier for 106 Form 40
LINE,13,0.917,0.07,1,1.5708,0.0,0.0,17.5415,12.145,0.0,13H(106	763P	586		
FORM 40);	763P	587		
212,2,18,1.414,0.07,1,1.5708,0.0,0.0,19.293,12.25,0.0,18HSIMPLE	765P	588	212 F 0	Identifier for 106 Form 63
CLOSED AREA,13,0.917,0.07,1,1.5708,0.0,0.0,19.5415,12.145,0.0,	765P	589		
13H(106 FORM 63);	765P	590		
212,2,15,1.211,0.07,1,1.5708,0.0,0.0,1.3945,10.25,0.0,15HUNBOUND	767P	591	212 F 0	Identifier for 108 Form 0
ED PLANE,12,0.847,0.07,1,1.5708,0.0,0.0,1.5765,10.145,0.0,12H(10	767P	592		
8 FORM 0);	767P	593		
212,2,13,1.043,0.07,1,1.5708,0.0,0.0,3.4785,10.25,0.0,13HBOUNDED	769P	594	212 F 0	Identifier for 108 Form 1
PLANE,12,0.819,0.07,1,1.5708,0.0,0.0,3.5905,10.145,0.0,12H(108	769P	595		
FORM 1);	769P	596		
212,1,10,0.63,0.07,1,1.5708,0.0,0.0,5.685,10.25,0.0,10HLINE (110	771P	597	212 F 0	Identifier for 110
);	771P	598		
212,2,17,1.33,0.07,1,1.5708,0.0,0.0,7.335,10.25,0.0,17HPARAMETRI	773P	599	212 F 0	Identifier for 112
C SPLINE,11,0.728,0.07,1,1.5708,0.0,0.0,7.636,10.145,0.0,11HCURV	773P	600		
E (112);	773P	601		
212,2,17,1.33,0.07,1,1.5708,0.0,0.0,9.335,10.25,0.0,17HPARAMETRI	775P	602	212 F 0	Identifier for 114
C SPLINE,13,0.896,0.07,1,1.5708,0.0,0.0,9.552,10.145,0.0,13HSURF	775P	603		
ACE (114);	775P	604		
212,1,11,0.707,0.07,1,1.5708,0.0,0.0,11.6465,10.25,0.0,11HPOINT	777P	605	212 F 0	Identifier for 116
(116);	777P	606		
212,2,19,1.498,0.07,1,1.5708,0.0,0.0,13.251,10.25,0.0,19HRULED S	779P	607	212 F 0	Identifier for 118 Form 0
URFACE - ARC,19,1.372,0.07,1,1.5708,0.0,0.0,13.314,10.145,0.0,	779P	608		
19HLENGTH (118 FORM 0);	779P	609		
212,2,16,1.253,0.07,1,1.5708,0.0,0.0,15.3735,10.25,0.0,16HRULED	781P	610	212 F 0	Identifier for 118 Form 1
SURFACE - ,23,1.659,0.07,1,1.5708,0.0,0.0,15.1705,10.145,0.0,23H	781P	611		
PARAMETRIC (118 FORM 1);	781P	612		
212,2,11,0.868,0.07,1,1.5708,0.0,0.0,17.566,10.25,0.0,11HSURFACE	783P	613	212 F 0	Identifier for 120
OF ,16,1.148,0.07,1,1.5708,0.0,0.0,17.426,10.145,0.0,16HREVOLUT	783P	614		
ION (120);	783P	615		
212,2,18,1.435,0.07,1,1.5708,0.0,0.0,19.2825,10.25,0.0,18HTABULA	785P	616	212 F 0	Identifier for 122
TED CYLINDER,5,0.273,0.07,1,1.5708,0.0,0.0,19.8635,10.145,0.0,5H	785P	617		
(122);	785P	618		
212,2,14,1.141,0.07,1,1.5708,0.0,0.0,1.4295,8.25,0.0,14HTRANSFOR	787P	619	212 F 0	Identifier for 124 Form 0
MATION,23,1.617,0.07,1,1.5708,0.0,0.0,1.1915,8.145,0.0,23HMATRIX	787P	620		
D-1 (124 FORM 0);	787P	621		
212,2,14,1.141,0.07,1,1.5708,0.0,0.0,3.4295,8.25,0.0,14HTRANSFOR	789P	622	212 F 0	Identifier for 124 Form 1
MATION,24,1.666,0.07,1,1.5708,0.0,0.0,3.167,8.145,0.0,24HMATRIX	789P	623		
D-1 (124 FORM 1);	789P	624		
212,2,17,1.316,0.07,1,1.5708,0.0,0.0,5.342,8.25,0.0,17HRATIONAL	791P	625	212 F 0	Identifier for 126 Form 0
B-SPLINE,18,1.309,0.07,1,1.5708,0.0,0.0,5.3455,8.145,0.0,18HCURV	791P	626		

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E (126 FORM 0);                                                  791P 627
212,2,17,1.316,0.07,1,1.5708,0.0,0,7.342,8.25,0.0,17HRATIONAL    793P 628   212 F 0   Identifier for 128 Form 0
B-SPLINE,20,1.477,0.07,1,1.5708,0.0,0.0,7.2615,8.145,0.0,20HSURF 793P 629
ACE (128 FORM 0);                                                793P 630
212,2,14,1.057,0.07,1,1.5708,0.0,0,9.4715,8.25,0.0,14HRBS RIGH   795P 631   212 F 0   Identifier for 128 Form 2
T CIRC,21,1.533,0.07,1,1.5708,0.0,0,9.2335,8.145,0.0,21HCYLIND   795P 632
ER (128 FORM 2);                                                 795P 633
212,1,21,1.547,0.07,1,1.5708,0.0,0,11.2265,8.25,0.0,21HRBS CON   797P 634   212 F 0   Identifier for 128 Form 3
E (128 FORM 3);                                                  797P 635
212,2,10,0.791,0.07,1,1.5708,0.0,0,13.6045,8.25,0.0,10HRBS SPH   799P 636   212 F 0   Identifier for 128 Form 4
ERE,12,0.84,0.07,1,1.5708,0.0,0,13.58,8.145,0.0,12H(128 FORM 4   799P 637
);                                                               799P 638
212,2,9,0.721,0.07,1,1.5708,0.0,0,15.6395,8.25,0.0,9HRBS TORUS   801P 639   212 F 0   Identifier for 128 Form 5
,12,0.84,0.07,1,1.5708,0.0,0,15.58,8.145,0.0,12H(128 FORM 5);    801P 640
212,2,11,0.882,0.07,1,1.5708,0.0,0,17.559,8.25,0.0,11HRBS GENE   803P 641   212 F 0   Identifier for 128 Form 9
RAL,22,1.61,0.07,1,1.5708,0.0,0,17.195,8.145,0.0,22HQUADRATIC    803P 642
(128 FORM 9);                                                    803P 643
212,2,12,0.973,0.07,1,1.5708,0.0,0,19.5135,8.25,0.0,12HOFFSET    805P 644   212 F 0   Identifier for 130
CURVE,5,0.287,0.07,1,1.5708,0.0,0,19.8565,8.145,0.0,5H(130);     805P 645
212,2,14,1.134,0.07,1,1.5708,0.0,0,1.433,6.25,0.0,14HOFFSET SU   807P 646   212 F 0   Identifier for 140
RFACE,5,0.287,0.07,1,1.5708,0.0,0,1.8565,6.145,0.0,5H(140);      807P 647
212,2,19,1.512,0.07,1,1.5708,0.0,0,3.244,6.25,0.0,19HCURVE ON    809P 648   212 F 0   Identifier for 142
PARAMETRIC,13,0.917,0.07,1,1.5708,0.0,0,3.5415,6.145,0.0,13HSU   809P 649
RFACE (142);                                                     809P 650
212,2,18,1.449,0.07,1,1.5708,0.0,0,5.2755,6.25,0.0,18HTRIMMED    811P 651   212 F 0   Identifier for 144
PARAMETRIC,13,0.924,0.07,1,1.5708,0.0,0,5.538,6.145,0.0,13HSUR   811P 652
FACE (144);                                                      811P 653
212,2,17,1.33,0.07,1,1.5708,0.0,0,7.335,6.25,0.0,17HANGULAR DI   813P 654   212 F 0   Identifier for 202
MENSION,5,0.301,0.07,1,1.5708,0.0,0,7.8495,6.145,0.0,5H(202);    813P 655
212,2,18,1.407,0.07,1,1.5708,0.0,0,9.2965,6.25,0.0,18HDIAMETER   815P 656   212 F 0   Identifier for 206
DIMENSION,5,0.308,0.07,1,1.5708,0.0,0,9.846,6.145,0.0,5H(206)    815P 657
;                                                                815P 658
212,1,19,1.393,0.07,1,1.5708,0.0,0,11.3035,6.25,0.0,19HGENERAL   817P 659   212 F 0   Identifier for 210
LABEL (210);                                                     817P 660
212,2,21,1.652,0.07,1,1.5708,0.0,0,13.174,6.25,0.0,21HGENERAL    819P 661   212 F 0   Identifier for 212 Form 0
NOTE - SIMPLE,12,0.826,0.07,1,1.5708,0.0,0,13.587,6.145,0.0,     819P 662
12H(212 FORM 0);                                                 819P 663
212,2,17,1.316,0.07,1,1.5708,0.0,0,15.342,6.25,0.0,17HNOTE - D   821P 664   212 F 0   Identifier for 212 Form 1
UAL STACK,12,0.798,0.07,1,1.5708,0.0,0,15.601,6.145,0.0,12H(21   821P 665
2 FORM 1);                                                       821P 666
212,2,20,1.575,0.07,1,1.5708,0.0,0,17.2125,6.25,0.0,20HNOTE -    823P 667   212 F 0   Identifier for 212 Form 2
IMBEDDED FONT,19,1.365,0.07,1,1.5708,0.0,0,17.3175,6.145,0.0,    823P 668
19HCHANGE (212 FORM 2);                                          823P 669
212,2,18,1.407,0.07,1,1.5708,0.0,0,19.2965,6.25,0.0,18HNOTE -    825P 670   212 F 0   Identifier for 212 Form 3
SUPERSCRIPT,12,0.826,0.07,1,1.5708,0.0,0,19.587,6.145,0.0,12H(   825P 671
212 FORM 3);                                                     825P 672
212,2,16,1.246,0.07,1,1.5708,0.0,0,1.377,4.25,0.0,16HNOTE - SU   827P 673   212 F 0   Identifier for 212 Form 4
BSCRIPT,12,0.826,0.07,1,1.5708,0.0,0,1.587,4.145,0.0,12H(212 F   827P 674
ORM 4);                                                          827P 675
212,2,16,1.26,0.07,1,1.5708,0.0,0,3.37,4.25,0.0,16HNOTE - SUPE   829P 676   212 F 0   Identifier for 212 Form 5
R/SUB,19,1.351,0.07,1,1.5708,0.0,0,3.3245,4.145,0.0,19HSCRIPT    829P 677
(212 FORM 5);                                                    829P 678
212,2,18,1.4,0.07,1,1.5708,0.0,0,5.3,4.25,0.0,18HNOTE - MULTI    831P 679   212 F 0   Identifier for 212 Form 6
STACK,22,1.603,0.07,1,1.5708,0.0,0,5.1985,4.145,0.0,22HLEFT JU   831P 680
ST (212 FORM 6);                                                 831P 681
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Parameter data	Seq	Seq	Field	Identifier
212,2,18,1.4,0.07,1,1.5708,0.0,0,0,7.3,4.25,0.0,18HNOTE - MULTISTACK,22,1.603,0.07,1,1.5708,0.0,0,0,7.1985,4.145,0.0,22HCENT JUST (212 FORM 7);	833P	682 683 684	212 F 0	Identifier for 212 Form 7
212,2,18,1.4,0.07,1,1.5708,0.0,0,0,9.3,4.25,0.0,18HNOTE - MULTISTACK,23,1.652,0.07,1,1.5708,0.0,0,0,9.174,4.145,0.0,23HRIGHT JUST (212 FORM 8);	835P	685 686 687	212 F 0	Identifier for 212 Form 8
212,2,13,1.015,0.07,1,1.5708,0.0,0,0,11.4925,4.25,0.0,13HNOTE - SIMPLE,23,1.652,0.07,1,1.5708,0.0,0,0,11.174,4.145,0.0,23HFRACTION (212 FORM 100);	837P	688 689 690	212 F 0	Identifier for 212 Form 100
212,2,17,1.316,0.07,1,1.5708,0.0,0,0,13.342,4.25,0.0,17HNOTE - DUAL STACK,23,1.624,0.07,1,1.5708,0.0,0,0,13.188,4.145,0.0,23HFRACTION (212 FORM 101);	839P	691 692 693	212 F 0	Identifier for 212 Form 101
212,2,18,1.442,0.07,1,1.5708,0.0,0,0,15.279,4.25,0.0,18HNOTE - FONT/DOUBLE,23,1.645,0.07,1,1.5708,0.0,0,0,15.1775,4.145,0.0,23HFRACTION (212 FORM 102);	841P	694 695 696	212 F 0	Identifier for 212 Form 102
212,2,16,1.26,0.07,1,1.5708,0.0,0,0,17.37,4.25,0.0,16HNOTE - SUPER/SUB,23,1.652,0.07,1,1.5708,0.0,0,0,17.174,4.145,0.0,23HFRACTION (212 FORM 105);	843P	697 698 699	212 F 0	Identifier for 212 Form 105
212,2,14,1.106,0.07,1,1.5708,0.0,0,0,19.447,4.25,0.0,14HLEADER - WEDGE,12,0.805,0.07,1,1.5708,0.0,0,0,19.5975,4.145,0.0,12H(214 FORM 1);	845P	700 701 702	212 F 0	Identifier for 214 Form 1
212,2,17,1.323,0.07,1,1.5708,0.0,0,0,1.3385,2.25,0.0,17HLEADER - TRIANGLE,12,0.826,0.07,1,1.5708,0.0,0,0,1.587,2.145,0.0,12H(214 FORM 2);	847P	703 704 705	212 F 0	Identifier for 214 Form 2
212,2,15,1.162,0.07,1,1.5708,0.0,0,0,3.419,2.25,0.0,15HLEADER - FILLED,21,1.526,0.07,1,1.5708,0.0,0,0,3.237,2.145,0.0,21HTRIANGLE (214 FORM 3);	849P	706 707 708	212 F 0	Identifier for 214 Form 3
212,2,15,1.169,0.07,1,1.5708,0.0,0,0,7.4155,2.25,0.0,15HLEADER - CIRCLE,12,0.833,0.07,1,1.5708,0.0,0,0,7.5835,2.145,0.0,12H(214 FORM 5);	851P	709 710 711	212 F 0	Identifier for 214 Form 4
212,2,17,1.344,0.07,1,1.5708,0.0,0,0,5.328,2.25,0.0,17HLEADER - NO ARROW,12,0.833,0.07,1,1.5708,0.0,0,0,5.5835,2.145,0.0,12H(214 FORM 4);	853P	712 713 714	212 F 0	Identifier for 214 Form 5
212,2,14,1.085,0.07,1,1.5708,0.0,0,0,9.4575,2.25,0.0,14HLEAER - FILLED,19,1.365,0.07,1,1.5708,0.0,0,0,9.3175,2.145,0.0,19HCIRCLE (212 FORM 6);	855P	715 716 717	212 F 0	Identifier for 214 Form 6
212,2,18,1.435,0.07,1,1.5708,0.0,0,0,11.2825,2.25,0.0,18HLEADER - RECTANGLE,12,0.833,0.07,1,1.5708,0.0,0,0,11.5835,2.145,0.0,12H(214 FORM 7);	857P	718 719 720	212 F 0	Identifier for 214 Form 7
212,2,15,1.162,0.07,1,1.5708,0.0,0,0,13.419,2.25,0.0,15HLEADER - FILLED,22,1.645,0.07,1,1.5708,0.0,0,0,13.1775,2.145,0.0,22HRECTANGLE (214 FORM 8);	859P	721 722 723	212 F 0	Identifier for 214 Form 8
212,2,14,1.085,0.07,1,1.5708,0.0,0,0,15.4575,2.25,0.0,14HLEADER - SLASH,12,0.833,0.07,1,1.5708,0.0,0,0,15.5835,2.145,0.0,12H(214 FORM 9);	861P	724 725 726	212 F 0	Identifier for 214 Form 9
212,2,17,1.323,0.07,1,1.5708,0.0,0,0,17.3385,2.25,0.0,17HLEADER - INTEGRAL,18,1.239,0.07,1,1.5708,0.0,0,0,17.3805,2.145,0.0,18HSIGN (214 FORM 10);	863P	727 728 729	212 F 0	Identifier for 214 Form 10
212,2,13,1.022,0.07,1,1.5708,0.0,0,0,19.489,2.25,0.0,13HLEADER - OPEN,22,1.547,0.07,1,1.5708,0.0,0,0,19.2265,2.145,0.0,22HTRIANGLE (214 FORM 11);	865P	730 731 732	212 F 0	Identifier for 214 Form 11
212,2,16,1.232,0.07,1,1.5708,0.0,0,0,1.384,0.25,0.0,16HLINEAR DIMENSION,5,0.28,0.07,1,1.5708,0.0,0,0,1.86,0.145,0.0,5H(216);	867P	733 734	212 F 0	Identifier for 216
212,2,18,1.393,0.07,1,1.5708,0.0,0,0,3.3035,0.25,0.0,18HORDINATE DIMENSION,5,0.287,0.07,1,1.5708,0.0,0,0,3.8565,0.145,0.0,5H(218	869P	735 736	212 F 0	Identifier for 218

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212,2,15,1.148,0.07,1,1.5708,0.0,0.0,5.426,0.25,0.0,15HPOINT DIM
ENSION,5,0.301,0.07,1,1.5708,0.0,0.0,5.8495,0.145,0.0,5H(220);
212,2,16,1.218,0.07,1,1.5708,0.0,0.0,7.391,0.25,0.0,16HRADIUS DI
MENSION,5,0.294,0.07,1,1.5708,0.0,0.0,7.853,0.145,0.0,5H(222);
212,2,16,1.288,0.07,1,1.5708,0.0,0.0,9.356,0.25,0.0,16HSYMBOL -
GENERAL,12,0.861,0.07,1,1.5708,0.0,0.0,9.5695,0.145,0.0,12H(228
FORM 0);
212,2,14,1.134,0.07,1,1.5708,0.0,0.0,11.433,0.25,0.0,14HSYMBOL -
DATUM,20,1.477,0.07,1,1.5708,0.0,0.0,11.2615,0.145,0.0,20HFEATU
RE (228 FORM 1);
212,2,14,1.134,0.07,1,1.5708,0.0,0.0,13.433,0.25,0.0,14HSYMBOL -
DATUM,19,1.407,0.07,1,1.5708,0.0,0.0,13.2965,0.145,0.0,19HTARGE
T (228 FORM 2);
212,2,16,1.295,0.07,1,1.5708,0.0,0.0,15.3525,0.25,0.0,16HSYMBOL
- FEATURE,20,1.512,0.07,1,1.5708,0.0,0.0,15.244,0.145,0.0,20HCON
TROL (228 FORM 3);
212,2,14,1.099,0.07,1,1.5708,0.0,0.0,17.4505,0.25,0.0,14HSECTION
ED AREA,5,0.308,0.07,1,1.5708,0.0,0.0,17.846,0.145,0.0,5H(230);
212,5,17,1.746,0.09,1,1.5708,0.0,0.0,19.127,1.0,0.0,17HCALS TEST
NETWORK,11,1.098,0.09,1,1.5708,0.0,0.0,19.451,0.865,0.0,11HMIL-
D-28000,8,0.738,0.09,1,1.5708,0.0,0.0,19.631,0.73,0.0,8HCLASS II
,17,1.755,0.09,1,1.5708,0.0,0.0,19.1225,0.595,0.0,17HREFERENCE D
RAWING,8,0.819,0.09,1,1.5708,0.0,0.0,19.591,0.46,0.0,8HN-ENTITY;
212,2,4,0.431667,0.125,1,1.5708,0.0,0.0,15.5,7.125,0.0,4HDUAL,5,
0.54,0.125,1,1.5708,0.0,0.0,15.5,6.9375,0.0,5HSTACK;
0.1,7,0.72,0.125,1,1.5708,0.0,0.0,17.5,7.125,0.0,7HIM    ED;
0.1,5,0.53,0.125,1,1.5708,0.0,0.0,17.5,7.125,0.0,5H  BED;
212,2,1,0.113333,0.125,1,1.5708,0.0,0.0,19.5,7.125,0.0,1HS,5,
0.558333,0.125,1,1.5708,0.0,0.0,19.6133,7.21875,0.0,5HSUPER;
212,2,1,0.113333,0.125,1,1.5708,0.0,0.0,1.5,5.125,0.0,1HS,3,
0.343333,0.125,1,1.5708,0.0,0.0,1.61333,5.03125,0.0,3HSUB;
212,3,1,0.113333,0.125,1,1.5708,0.0,0.0,3.5,5.125,0.0,1HS,5,
0.558333,0.125,1,1.5708,0.0,0.0,3.61333,5.21875,0.0,5HSUPER,3,
0.343333,0.125,1,1.5708,0.0,0.0,3.61333,5.03125,0.0,3HSUB;
212,3,1,0.116667,0.125,1,1.5708,0.0,0.0,5.5,5.25,0.0,1HM,5,0.54,
0.125,1,1.5708,0.0,0.0,5.5,5.0625,0.0,5HSTACK,4,0.423333,0.125,
1,1.5708,0.0,0.0,5.5,4.875,0.0,4HLEFT;
212,3,1,0.116667,0.125,1,1.5708,0.0,0.0,7.94167,5.25,0.0,1HM,5,
0.54,0.125,1,1.5708,0.0,0.0,7.73,5.0625,0.0,5HSTACK,6,0.645,
0.125,1,1.5708,0.0,0.0,7.6775,4.875,0.0,6HCENTER;
212,3,1,0.116667,0.125,1,1.5708,0.0,0.0,10.3833,5.25,0.0,1HM,5,
0.54,0.125,1,1.5708,0.0,0.0,9.96,5.0625,0.0,5HSTACK,5,0.51B333,
0.125,1,1.5708,0.0,0.0,9.98167,4.875,0.0,5HRIGHT;
212,5,2,0.173333,0.125,1,1.5708,0.0,0.0,11.5,5.25,0.0,2H  ,4,
0.436667,0.125,1,1.5708,0.0,0.0,11.6733,5.15625,0.0,4HFRAC,6,
0.613333,0.125,1,1.5708,0.0,0.0,11.5,5.0625,0.0,6HS  ---,2,
0.173333,0.125,1,1.5708,0.0,0.0,11.5,4.875,0.0,2H   ,4,0.405,
0.125,1,1.5708,0.0,0.0,11.6733,4.96875,0.0,4HTION;
212,10,7,0.606667,0.125,1,1.5708,0.0,0.0,13.5,5.5,0.0,7H
2,0.231667,0.125,1,1.5708,0.0,0.0,14.1067,5.40625,0.0,2HTO,9,
0.915,0.125,1,1.5708,0.0,0.0,13.5,5.3125,0.0,9HDUAL  ---,8,
0.693333,0.125,1,1.5708,0.0,0.0,13.5,5.125,0.0,8H        ,1,
0.11667,0.125,1,1.5708,0.0,0.0,14.1933,5.21875,0.0,1HP,8,
0.693333,0.125,1,1.5708,0.0,0.0,13.5,4.9375,0.0,8H        ,3,
```

Seq	Line	Entity	Description
869P	737		
871P	738	212 F 0	identifier for 220
871P	739		
873P	740	212 F 0	identifier for 222
873P	741		
875P	742	212 F 0	identifier for 228 Form 0
875P	743		
875P	744		
877P	745	212 F 0	identifier for 228 Form 1
877P	746		
877P	747		
879P	748	212 F 0	identifier for 228 Form 2
879P	749		
879P	750		
881P	751	212 F 0	identifier for 228 Form 3
881P	752		
881P	753		
883P	754	212 F 0	identifier for 230
883P	755		
885P	756	212 F 0	title block
885P	757		
885P	758		
885P	759		
887P	760		
887P	761	212 F 1	note - dual stack
889P	762		
891P	763		
893P	764		
893P	765	212 F 3	note - superscript
895P	766		
895P	767	212 F 4	note - subscript
897P	768		
897P	769	212 F 5	note - super/subscript
897P	770		
899P	771		
899P	772	212 F 6	note - multi stack left justified
899P	773		
901P	774		
901P	775	212 F 7	note - multi stack center justified
901P	776		
903P	777		
903P	778	212 F 8	note - multi stack right justified
903P	779		
905P	780		
905P	781	212 F 100	note - simple fraction
905P	782		
905P	783		
907P	784		
907P	785		
907P	786	212 F 101	note - dual stack fraction
907P	787		
907P	788		
907P	789		
907P	790		
907P	791		

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0.348333,0.125,1,1.5708,0.0,0.0,14.1933,4.84375,0.0,3HHOT,11,
1.14333,0.125,1,1.5708,0.0,0.0,13.5,4.75,0.0,11HSTACK ----,8,
0.693333,0.125,1,1.5708,0.0,0.0,13.5,4.5625,0.0,8H             ,3,
0.348333,0.125,1,1.5708,0.0,0.0,14.1933,4.65625,0.0,3HTOM;
0.5,4,0.36,0.125,1,1.5708,0.0,0.0,15.125,5.25,0.0,4H         ,14,    ACT
1.42,0.125,1,1.5708,0.0,0.0,15.525,5.15625,0.0,14HBED
,19,2.01,0.125,1,1.5708,0.0,0.0,15.125,5.0625,0.0,19HIM ----
FR  ----,4,0.36,0.125,1,1.5708,0.0,0.0,15.125,4.875,0.0,4H
14,1.38,0.125,1,1.5708,0.0,0.0,15.525,4.96875,0.0,14HDED
ION:
0.1,10,0.91,0.125,1,1.5708,0.0,0.0,0,15.125,5.0625,0.0,10H
4;
212,15,12,1.08,0.125,1,1.5708,0.0,0.0,0,17.125,5.875,0.0,12H
        ,1,0.12,0.125,1,1.5708,0.0,0.0,0,18.325,5.78125,0.0,1HO,14,
1.35,0.125,1,1.5708,0.0,0.0,17.125,5.6875,0.0,14H             T ----,
12,1.08,0.125,1,1.5708,0.0,0.0,0,17.125,5.5,0.0,12H                  ,1,
0.11,0.125,1,1.5708,0.0,0.0,0,18.325,5.59375,0.0,1HP,4,0.36,0.125,
1,1.5708,0.0,0.0,17.125,5.3125,0.0,4H        ,3,0.34,0.125,1,1.5708,
0.0,0.0,17.525,5.21875,0.0,3HSUP,8,0.88,0.125,1,1.5708,0.0,0.0,0,
17.125,5.125,0.0,8HFR ----,4,0.36,0.125,1,1.5708,0.0,0.0,0,
17.125,4.9375,0.0,4H        ,3,0.35,0.125,1,1.5708,0.0,0.0,17.525,
5.03125,0.0,3HSUB,12,1.08,0.125,1,1.5708,0.0,0,0,17.125,4.75,
0.0,12H          ,2,0.24,0.125,1,1.5708,0.0,0.0,0,18.325,
4.65625,0.0,2HTT,15,1.49,0.125,1,1.5708,0.0,0.0,17.125,4.5625,
0.0,15H      BO ----,12,1.08,0.125,1,1.5708,0.0,0.0,0,17.125,
4.375,0.0,12H            ,2,0.26,0.125,1,1.5708,0.0,0.0,0,18.325,
4.46875,0.0,2HOM:
0.1,6,1.27,0.25,1,1.5708,0.0,0.0,0,7.24784,2.9598,-4.18579,6HHAT
RIX;
0.1,6,1.27,0.25,1,1.5708,0.0,0.0,0,-4.5,8.75,0.0,6HMATRIX;
110,18.0,10.5,0.0,18.0,11.75,0.0;
100,0.0,18.6563,11.125,18.5,11.5,18.5,10.75;
0,3,10,10,0;
120,919,921,0.0,6.28318;
110,14.0,8.5,0.0,14.0,9.75,0.0;
0,3,10,10,0;
0,927,323,0.0,6.28318;
100,0.0,20.0,11.0,20.25,11.0,19.75,11.0;
0,3,5,5,0;
122,933,20.4857,11.2357,-0.942809;
128,3,7,3,5,0.0,0.0,0.0,1.0,2.0,3.0,3.0,0.0,0.0,0.0,1.0,1.0,1.0,1.0,0.0,0.0,0.0,
0.0,0.0,0.0,0.0,1.0,2.0,3.0,3.0,0.0,0.0,0.0,1.0,1.0,1.0,1.0,0.0,0.0,0.0,1.0,
1.0,1.0,0.1,0.1,0.1,0.1,0.1,0.1,0.1,0.1,0.1,0.1,0.1,0.8,5,9.5,1.0,0.8.5,
1.0,1.0,0.1,0.1,0.1,0.1,0.1,0.1,0.1,0.1,0.1,0.1,0.8.5,9.5,1.0,0.8.5,
9.25,0.666667,8.5,9.0,0.333333,8.5,8.75,0.0,8.49394,9.44659,1.0,
8.49394,9.19659,0.666667,8.49394,8.94659,0.333333,8.49394,
8.69659,0.0,0.43636,9.39545,1.0,8.43636,9.14546,0.666667,
8.43636,8.89545,0.333333,8.43636,8.64545,0.0,8.21364,9.4858,1.0,
8.21364,9.2358,0.666667,8.21364,8.9858,0.333333,8.21364,8.7358,
0.0,7.78636,9.82671,1.0,7.78637,9.57671,0.666667,7.78637,
9.32671,0.333333,7.78636,9.07671,0.0,7.56363,9.80454,1.0,
7.56363,9.55454,0.666667,7.56363,9.30454,0.333333,7.56363,
9.05454,0.0,7.50606,9.62841,1.0,7.50606,9.37841,0.666667,
7.50606,9.12841,0.333333,7.50606,8.87841,0.0,7.5,9.5,1.0,7.5,
9.25,0.666667,7.5,9.0,0.333333,7.5,8.75,0.0,0.0,1.0,0.0,3.0;
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907P	792			
907P	793			
907P	794			
907P	795			
909P	796			
909P	797			
909P	798			
909P	799			
909P	800			
911P	801			
911P	802			
911P	803			
913P	804	212	F	105	note - super/sub fraction
913P	805			
913P	806			
913P	807			
913P	808			
913P	809			
913P	810			
913P	811			
913P	812			
913P	813			
913P	814			
913P	815			
913P	816			
913P	817			
913P	818			
915P	819			
915P	820			
917P	821	110			line for 120
919P	822	100			cicular arc for 120
921P	823			
923P	824			
925P	825	120			surface of revolution
927P	826	110			line for 128 Form 4
929P	827			
931P	828			
933P	829	100			circular arc for 122
935P	830			
937P	831	122			tabulated cylinder
939P	832	128	F	0	rational b-spline surface
939P	833			
939P	834			
939P	835			
939P	836			
939P	837			
939P	838			
939P	839			
939P	840			
939P	841			
939P	842			
939P	843			
939P	844			
939P	845			
939P	846			

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100,0.0,14.875,11.0,14.5,11.5,14.5,10.5;
110,13.5,11.5,0.0,13.5,10.5,0.0;
0,3,5,5;
118,941,943,0,0;
100,0.0,16.875,11.0,16.5,11.5,16.5,10.5;
110,15.5,11.5,0.0,15.5,10.5,0.0;
0,3,5,5;
118,949,951,0,0;
110,16.0,9.5,0.0,16.0,8.5,0.0;
0,3,10,10;
0,957,321,0.0,6.28310;
128,7,10,7,7,0,1,0,0,0,0,0,0,0,0,0,0,0,0,0,1,0,1,0,
1.0,1.0,1.0,1.0,1.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,1.0,1.0,1.0,1.0,2.0,
3.0,4.0,4.0,4.0,4.0,4.0,4.0,1.0,1.0,1.0,1.0,1.0,1.0,1.0,1.0,1.0,
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1.0,12.0,8.5,-0.433012,12.0,8.64158,-0.473511,12.0,8.78315,
-0.514011,12.0,8.92473,-0.554511,12.0,9.0663,-0.59501,12.0,
9.20787,-0.635509,12.0,9.34944,-0.676011,12.0,9.49103,-0.716507,
11.8837,8.5,-0.433012,11.892,8.64158,-0.473511,11.9003,8.78315,
-0.514011,11.9086,8.92473,-0.554511,11.9169,9.0663,-0.59501,
11.9252,9.20787,-0.635509,11.9335,9.34944,-0.676011,11.9418,
9.49103,-0.716507,11.648,8.53158,-0.378307,11.6731,8.6709,
-0.42274,11.6983,8.81022,-0.46712,11.7234,8.94954,-0.511528,
11.7485,9.08886,-0.555936,11.7737,9.22817,-0.600345,11.7988,
9.36749,-0.644751,11.824,9.50682,-0.689154,11.3681,8.66514,
-0.146989,11.4132,8.79492,-0.20792,11.4584,8.92469,-0.268852,
11.5035,9.05447,-0.32978,11.5487,9.18425,-0.390711,11.5938,
9.31403,-0.451639,11.6389,9.4438,-0.512569,11.684,9.57359,
-0.573494,11.3783,8.95908,0.362137,11.4227,9.06786,0.264839,
11.4671,9.17664,0.167537,11.5115,9.28543,0.0702386,11.5559,
9.39421,-0.0270576,11.6003,9.50299,-0.124352,11.6447,9.61177,
-0.221646,11.6892,9.72056,-0.318937,12.0,9.20586,0.789574,12.0,
9.29702,0.661743,12.0,9.38817,0.533913,12.0,9.47933,0.406084,
12.0,9.57048,0.278254,12.0,9.66163,0.150427,12.0,9.75279,
0.0226035,12.0,9.84396,-0.105211,12.6217,8.95908,0.362144,
12.5773,9.06787,0.264847,12.5329,9.17665,0.167551,12.4885,
9.28544,0.0270414,12.3997,9.50299,
-0.124339,12.3553,9.61177,-0.221637,12.3108,9.72057,-0.318927,
12.6319,8.66513,-0.146992,12.5868,8.79491,-0.207922,12.5417,
8.92469,-0.268853,12.4965,9.05447,-0.329783,12.4514,9.18425,
-0.390715,12.4063,9.31402,-0.451645,12.3611,9.4438,-0.512576,
12.3159,9.57359,-0.573499,12.352,8.53158,-0.378309,12.3268,
8.6709,-0.422717,12.3017,8.81022,-0.467125,12.2766,8.94954,
-0.511534,12.2514,9.08886,-0.555943,12.2263,9.22817,-0.600352,
12.2011,9.36748,-0.644758,12.176,9.50682,-0.689155,12.1163,8.5,
-0.433012,12.108,8.64158,-0.473511,12.0997,8.78315,-0.514011,
12.0914,8.92473,-0.554511,12.0831,9.0663,-0.59501,12.0748,
9.20787,-0.635509,12.0665,9.34944,-0.676011,12.0582,9.49103,
-0.716507,12.0,8.5,-0.433012,12.0,8.64158,-0.473511,12.0,
8.78315,-0.514011,12.0,8.92473,-0.554511,12.0,9.0663,-0.59501,
12.0,9.20787,-0.635509,12.0,9.34944,-0.676011,12.0,9.49103,
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Seq	DE / Form	Line No.	Description
941P	100	847	circular arc for 118 Form 0
943P	110	848	line for 118 Form 0
945P		849	
947P	118 F 0	850	ruled surface – arc length
949P	100	851	circular arc for 118 Form 1
951P	110	852	line for 118 Form 1
953P		853	
955P	118 F 1	854	ruled surface – parametric
957P	110	855	line for 128 Form 5
959P		856	
961P		857	
963P	128 F 3	858	rational b-spline cone
963P		859	
963P		860	
963P		861	
963P		862	
963P		863	
963P		864	
963P		865	
963P		866	
963P		867	
963P		868	
963P		869	
963P		870	
963P		871	
963P		872	
963P		873	
963P		874	
963P		875	
963P		876	
963P		877	
963P		878	
963P		879	
963P		880	
963P		881	
963P		882	
963P		883	
963P		884	
963P		885	
963P		886	
963P		887	
963P		888	
963P		889	
963P		890	
963P		891	
963P		892	
963P		893	
963P		894	
963P		895	
963P		896	
963P		897	
963P		898	
963P		899	
963P		900	
963P		901	

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rational b-spline right circ cylinder

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-0.716507,0.0,1.0,0.0,4.0;                                        963P  902
128,7,10,7,0,0,1,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,1.0,1.0,       965P  903
3.0,4.0,4.0,4.0,4.0,4.0,4.0,4.0,0,0,0,0,0,0,0,0,1.0,1.0,2.0,      965P  904
1.0,1.0,1.0,1.0,1.0,1.0,1.0,1.0,1.0,1.0,1.0,1.0,1.0,1.0,1.0,1.0,  965P  905
1.0,1.0,1.0,1.0,1.0,1.0,1.0,1.0,1.0,1.0,1.0,1.0,1.0,1.0,1.0,1.0,  965P  906
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1.0,1.0,10.0,8.5,-0.433013,10.0,8.62372,-0.504441,10.0,8.74744,   965P  911
-0.57587,10.0,8.87116,-0.647298,10.0,8.99487,-0.718728,10.0,      965P  912
9.11859,-0.790157,9.99999,9.2423,-0.861585,10.0,9.36603,          965P  913
-0.933013,9.88366,8.5,-0.433013,9.88368,8.62372,-0.504441,        965P  914
9.88367,8.74744,-0.57587,9.88368,8.87116,-0.647298,9.88368,       965P  915
8.99487,-0.718728,9.88366,9.11859,-0.790157,9.88368,9.2423,       965P  916
-0.861585,9.88366,9.36603,-0.933013,9.64802,8.53159,-0.378308,    965P  917
9.64802,8.6553,-0.449736,9.64802,8.77902,-0.521165,9.64802,       965P  918
9.64802,-0.592595,9.64802,9.02645,-0.664025,9.64802,9.15017,      965P  919
8.90274,-0.592595,9.64802,9.02645,-0.664884,9.64802,9.39761,-0.878308,  965P  920
-0.735455,9.64801,9.27388,-0.806884,9.64802,9.39761,-0.878308,    965P  921
9.3681,8.66514,-0.14699,9.36811,8.78885,-0.218421,9.36811,        965P  922
8.91257,-0.20985,9.36811,9.03629,-0.361281,9.36811,9.16,          965P  923
-0.43271,9.36811,9.28372,-0.504138,9.40743,-0.575566,             965P  924
9.3681,9.53116,-0.64699,9.37832,8.95908,0.362137,9.37832,9.0828,  965P  925
0.290705,9.37832,9.20651,0.219275,9.37833,9.33023,0.147843,       965P  926
9.37832,9.45395,0.0764132,9.37832,9.57766,4.98724E-03,9.37832,    965P  927
9.70138,-0.0664367,9.37832,9.82511,-0.137863,10.0,9.20586,        965P  928
0.789574,10.0,9.32958,0.718141,10.0,9.45329,0.646709,10.0,        965P  929
9.57701,0.575277,10.0,9.70072,0.503846,10.0,9.82444,0.432417,     965P  930
10.0,9.94816,0.360991,10.0,10.0,0.289574,10.6217,8.95909,         965P  931
0.362144,10.6217,9.0828,0.290714,10.6217,9.20652,0.219286,        965P  932
10.6217,9.33024,0.147857,10.6217,9.45395,0.076427,10.6217,        965P  933
9.57767,4.99725E-03,10.6217,9.70138,-0.0664334,10.6217,9.82511,   965P  934
-0.137856,10.6319,8.66513,-0.146992,10.6319,8.78885,-0.218422,    965P  935
10.6319,8.91257,-0.289851,10.6319,9.03629,-0.361281,10.6319,      965P  936
9.16,-0.432712,10.6319,9.28372,-0.504141,10.6319,9.40743,         965P  937
-0.575569,10.6319,9.53116,-0.646992,10.352,8.53158,-0.37831,      965P  938
10.352,8.6553,-0.44974,10.352,8.77902,-0.521169,10.352,8.90274,   965P  939
-0.592599,10.352,9.02645,-0.664031,10.352,9.15016,-0.73546,       965P  940
10.352,9.27388,-0.806889,10.352,9.39761,-0.87831,10.1163,8.5,     965P  941
-0.433013,10.1163,8.62372,-0.504441,10.1164,8.74744,-0.57587,     965P  942
10.1164,8.87116,-0.647298,10.1164,8.99487,-0.718728,10.1163,      965P  943
9.11859,-0.790157,10.1163,9.2423,-0.861585,10.1163,9.36603,       965P  944
-0.933013,10.0,8.5,-0.433013,10.0,8.62372,-0.504441,10.0,         965P  945
8.74744,-0.57587,10.0,8.87116,-0.647298,10.0,8.99487,-0.718728,   965P  946
10.0,9.11859,-0.790157,9.99999,9.2423,-0.861585,10.0,9.36603,     965P  947
-0.933013,0.0,1.0,0.0,0.0,4.0;                                    967P  948
114,3.1,1,3,0.0,1.0,0.0,1.0,0.2,0.3,0.6,5.0,0.0,0.0,0.0,-0.166666, 969P  949
0.50307E-06,-1.28746E-05,4.29153E-06,-1.43051E-06,-1.50204E-05,   969P  950
2.25306E-05,-7.51019E-06,-0.083325,6.4373E-06,-9.65595E-06,       969P  951
3.21865E-06,7.5,-0.75,0.0,0.0,-0.0999956,4.29153E-06,             969P  952
-4.29153E-06,0.0,-5.96046E-06,-1.07280E-06,-2.14577E-06,          969P  953
3.21865E-06,0.100002,-3.57628E-07,2.14577E-06,-1.78014E-06,1.0,   969P  954
-1.0,-1.19209E-07,5.96046E-08,0.0,0.0,0.0,0.0,5.36442E-07,        969P  955
-7.15256E-07,1.78814E-07,0.0,-3.57628E-07,4.76837E-07,            969P  956
0.3,5,5.0;
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parametric spline surface for 144

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-1.19209E-07,6.25,0.0,0.0,0.0,-0.416667,-2.14577E-06,                              969P 957
3.21865E-06,-1.07288E-06,-0.249998,3.21865E-06,-5.36442E-06,                       969P 958
2.14577E-06,-0.166666,-1.07288E-06,2.14577E-06,-1.07288E-06,7.5,                   969P 959
-0.749997,-4.29153E-06,1.43051E-06,0.199999,1.07288E-06,                           969P 960
-2.14577E-06,1.07288E-06,0.300002,-5.36442E-06,1.07288E-05,                        969P 961
-6.79493E-06,-0.25,2.86102E-06,-5.72205E-06,3.8147E-06,1.0,-1.0,                   969P 962
-3.57620E-07,1.19209E-07,0.0,0.0,0.0,0.0,0.0,0.0,0.0,                              969P 963
0.0,0.0,0.0,5.75,0.0,0.0,-0.416666,1.07288E-06,0.0,0.0,                            969P 964
0.0,0.249998,2.14577E-06,-2.14577E-06,0.0,-0.083332B,                              969P 965
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-4.76837E-07,0.0500009,-1.07288E-06,2.14577E-06,-1.07288E-06,                      969P 967
-0.450001,2.14577E-06,-4.29153E-06,3.57628E-06,0.149999,                           969P 968
-2.5034E-06,3.57628E-06,-2.02656E-06,1.0,-1.0,0.0,-3.57628E-07,                    969P 969
1.19209E-07,0.0,0.0,0.0,0.0,-5.36442E-07,7.15256E-07,                              969P 970
-1.78814E-07,0.0,3.57628E-07,-4.76837E-07,1.19209E-07,5.5,0.0,                     969P 971
0.0,0.0,-0.166669,-4.29153E-06,4.29153E-06,0.0,0.500007,                           969P 972
1.28746E-05,-1.28746E-06,0.0,-0.333338,-8.58307E-06,8.58307E-06,                   969P 973
1.20001,1.28746E-05,-1.28746E-06,0.0,-0.800005,-8.58307E-06,                       969P 974
8.58307E-06,0.0,1.0,-1.0,-1.19209E-07,5.96046E-08,0.0,0.0,0.0,                     969P 975
0.0,0.0,0.0,0.0,0.0,0.0,6.5,0.0,-0.166666,                                         969P 976
-4.29153E-06,1.28746E-05,-8.58307E-06,-1.43051E-06,7.51019E-06,                    969P 977
-2.25306E-05,1.50204E-05,-0.0833325,-3.21865E-06,9.65595E-06,                      969P 978
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-7.15256E-07,0.0,2.38419E-07,-7.15256E-07,4.76837E-07,6.25,0.0,                    969P 983
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-0.249998,-1.07288E-06,2.25,-2.14577E-06,0.166666,0.0,                             969P 985
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0.0,0.0,0.0,0.0,0.0,0.0,5.75,0.0,0.0,0.0,-0.416666,                                969P 989
-1.07288E-06,3.21865E-06,-2.14577E-06,0.249998,-2.14577E-06,                       969P 990
6.4373E-06,-4.29153E-06,-0.083332B,3.21865E-06,-9.65595E-06,                       969P 991
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-2.38419E-07,7.15256E-07,-4.76837E-07,5.5,0.0,0.0,0.0,-0.166669,                   969P 996
4.29153E-06,-1.28746E-05,8.58307E-06,0.500007,-1.28746E-05,                        969P 997
3.86238E-05,-2.57492E-05,-0.333338,8.58307E-06,-2.57492E-05,                       969P 998
1.71661E-05,6.75,-0.75,2.25,-1.5,-0.400002,4.29153E-06,                            969P 999
-1.28746E-05,8.58307E-06,1.20001,-1.28746E-05,3.86238E-05,                         969P 1000
-2.57492E-05,-0.800005,8.58307E-06,-2.57492E-05,1.71661E-05,                       969P 1001
0.0,-1.0,3.0,-2.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,                     969P 1002
0.0;                                                                               969P 1003
                                                                                   969P 1004
0,3,1,1,0;                                                                         969P 1005
114,3,1,1,3,0.0,1.0,0.1,0.0,1.0,2.0,3.0,4.5,0.0,0.0,0.0,-0.166666,                 971P 1006
8.58307E-06,-1.28746E-05,4.29153E-06,-2.86102E-06,-1.07288E-06,                    973P 1007
1.8239E-05,-7.51019E-06,-0.0833316,3.57628E-06,-6.79493E-06,                       973P 1008
3.21865E-06,7.5,-0.75,0.0,0.0,-0.0999956,4.29153E-06,                              973P 1009
-4.29153E-06,-5.96046E-06,-1.07288E-06,-2.14577E-06,                               973P 1010
3.21865E-06,0.100002,-3.57628E-07,2.14577E-06,-1.78814E-06,-1.0,                   973P 1011
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-1.0,-1.19209E-07,5.96046E-08,0.0,0.0,0.0,0.0,0.0,5.36442E-07,                                    973P    1012
-7.15256E-07,1.78814E-07,0.0,-3.57628E-07,4.76837E-07,                                            973P    1013
-1.19209E-07,4.25,1.43051E-06,-1.43051E-06,0.0,-0.416667,                                         973P    1014
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1.07288E-06,-2.14577E-06,1.07288E-06,0.300002,-5.36442E-06,                                       973P    1018
1.07288E-05,-6.79493E-06,-0.25,2.86102E-06,-5.72205E-06,                                          973P    .1019
3.8147E-06,1.0,-1.0,-3.57628E-07,1.19209E-07,0.0,0.0,0.0,0.0,                                      973P    1020
0.0,0.0,0.0,0.0,0.0,0.0,0.0,3.75,0.0,0.0,0.0,0.0,-0.416666,                                        973P    1021
1.07288E-06,-1.07288E-06,0.0,0.249990,2.14577E-06,-2.14577E-06,                                   973P    1022
0.0,-0.083328,-3.21865E-06,3.21865E-06,0.0,7.75,-0.749999,                                        973P    1023
-1.43051E-06,-4.76837E-07,0.050009,-1.07288E-06,2.14577E-06,                                      973P    1024
-1.07288E-06,-0.45001,2.14577E-06,-4.29153E-06,3.57628E-06,                                       973P    1025
0.149999,-2.5034E-06,3.57628E-06,-2.02656E-06,1.0,-1.0,                                            973P    1026
-3.57628E-07,1.19209E-07,0.0,0.0,0.0,0.0,0.0,-5.36442E-07,                                         973P    1027
7.15256E-07,-1.78814E-07,0.0,3.57628E-07,-4.76837E-07,                                             973P    1028
1.19209E-07,3.5,0.0,0.0,0.0,-0.166669,-4.29153E-06,4.29153E-06,                                    973P    1029
0.0,0.500007,1.28746E-05,-1.28746E-05,0.0,-0.333338,                                              973P    1030
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-4.29153E-06,4.29153E-06,0.0,1.20001,1.28746E-05,-1.28746E-05,                                    973P    1032
0.0,-0.800005,-8.58307E-06,8.58307E-06,0.0,1.0,-1.0,                                              '973P    1033
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0.0,0.0,0.4,5.0,0.0,0.0,-0.166666,-4.29153E-06,1.28746E-05,                                        973P    1035
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-1.43051E-06,4.29153E-06,-2.86102E-06,0.0,-1.0,3.0,-2.0,0.0,0.0,0.0,                               973P    1040
0.0,0.0,0.0,-3.57628E-07,1.07288E-06,-7.15256E-07,0.0,                                             973P    1041
2.38419E-07,-7.15256E-07,4.76837E-07,4.25,-1.43051E-06,                                            973P    1042
4.29153E-06,-2.86102E-06,-0.416667,1.07288E-06,-3.21865E-06,                                       973P    1043
2.14577E-06,-0.249997,3.21865E-06,-9.65595E-06,6.4373E-06,                                         973P    1044
0.166665,-2.86102E-06,8.58307E-06,-5.72205E-06,6.75,-0.750001,                                     973P    1045
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-1.0,3.0,-2.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,                                             973P    1048
3.75,0.0,0.0,0.0,-0.416666,-1.07288E-06,3.21865E-06,                                               973P    1049
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-0.083328,3.21865E-06,-9.65595E-06,6.4373E-06,-0.750003,                                           973P    1051
2.25001,-1.50001,0.0500009,0.0,0.0,-0.449999,4.29153E-06,                                          973P    1052
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-1.07288E-06,7.15256E-07,0.0,-2.38419E-07,7.15256E-07,                                             973P    1055
-4.76837E-07,3.5,0.0,0.0,0.0,-0.166669,4.29153E-06,-1.28746E-05,                                   973P    1056
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0.0,0.0,0.0,0.0,0.0,0.0;                                                                           973P    1062
0,3,5,5,0;                                                                                         973P    1063
114,3,1,1,3,0.0,1.0,0.0,1.0,0.0,1.0,0.0,2.0,3.0,10.5,0.0,0.0,0.0,-0.166666,                        975P    1064
8.58307E-06,-8.50307E-06,0.0,-1.43051E-06,-1.50204E-05,                                            977P    1065
1.50204E-05,0.0,-0.0833325,6.4373E-06,-6.4373E-06,0.0,11.5,                                        977P    1066
```

parametric spline surface

114

118

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-0.75,0.,0.,-0.0999956,8.58307E-06,-8.58307E-06,0.,
-4.52995E-06,-8.58307E-06,8.58307E-06,0.,0.,0.100001,2.86102E-06,
-2.86102E-06,0.,0.,1.0,-1.0,-1.19209E-07,5.96046E-08,0.,0.,0.,0.,
0.,0.,5.36442E-07,-7.15256E-07,1.78814E-07,0.,0.,-3.57628E-07,
4.76837E-07,-1.19209E-07,10.25,0.,0.,0.,0.,-0.416667,
-2.14577E-06,2.14577E-06,0.,0.,-0.249998,2.14577E-06,-2.14577E-06,
0.,0.,0.166666,0.,0.,0.,0.,11.5,-0.749997,-2.86102E-06,0.,0.,
0.199999,0.,0.,0.,0.,0.,0.299999,0.,0.,0.,-0.249999,0.,0.,0.,0.,0.,
1.0,-1.0,-3.57628E-07,1.19209E-07,0.,0.,0.,0.,0.,0.,0.,0.,
0.,0.,0.,0.,0.,9.75,0.,0.,0.,-0.416666,2.14577E-06,
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7.15256E-07,
1.19209E-07,0.,0.,0.,0.,-5.36442E-07,7.15256E-07,
-1.78814E-07,0.,0.,3.57628E-07,-4.76837E-07,1.19209E-07,9.5,0.,0.,
0.,0.,-0.166669,-8.58307E-06,8.58307E-06,0.,0.,0.500007,
2.57492E-05,-2.57492E-05,0.,0.,-0.333338,-1.71661E-05,1.71661E-05,
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-8.58307E-06,2.57492E-05,-1.71661E-05,-1.43051E-06,1.50204E-05,
-4.50611E-05,3.00407E-05,-0.0833325,-6.4373E-06,1.93119E-05,
-1.28746E-05,10.75,-0.75,2.25,-1.5,-0.0999956,-8.58307E-06,
2.57492E-05,-1.71661E-05,-4.52995E-06,8.58307E-06,-2.57492E-05,
1.71661E-05,0.100001,-2.86102E-06,8.58307E-06,-5.72205E-06,0.0,
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-7.15256E-07,0.,0.,2.38419E-07,-7.15256E-07,4.76837E-07,10.25,0.0,
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-1.28746E-05,8.58307E-06,-0.0833328,-6.4373E-06,1.93119E-05,
1.28746E-05,11.0,0.500007,-2.57492E-05,7.72476E-05,-5.14984E-05,
0.0,-0.449999,0.,0.,0.,0.,0.149998,2.86102E-06,-8.58307E-06,
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-1.07288E-06,7.15256E-07,0.,0.,-2.38419E-07,7.15256E-07,
-4.76837E-07,9.5,0.,0.,0.,0.,-0.166669,8.58307E-06,-2.57492E-05,
1.71661E-05,0.500007,-2.57492E-05,7.72476E-05,-5.14984E-05,
-0.333338,1.71661E-05,-5.14984E-05,3.43323E-05,10.75,-0.75,2.25,
-1.5,-0.400002,8.58307E-06,-2.57492E-05,1.71661E-05,1.20001,
-2.57492E-05,7.72476E-05,-5.14984E-05,-0.800005,1.71661E-05,
-5.14984E-05,3.43323E-05,-1.0,3.0,-2.0,0.,0.,0.,0.,0.,0.,0.,
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0.3,5,5,0.;
118,987,989,0.,0.;
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	977P	1067
	977P	1068
	977P	1069
	977P	1070
	977P	1071
	977P	1072
	977P	1073
	977P	1074
	977P	1075
	977P	1076
	977P	1077
	977P	1078
	977P	1079
	977P	1080
	977P	1081
	977P	1082
	977P	1083
	977P	1084
	977P	1085
	977P	1086
	977P	1087
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	977P	1089
	977P	1090
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	977P	1092
	977P	1093
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	977P	1095
	977P	1096
	977P	1097
	977P	1098
	977P	1099
	977P	1100
	977P	1101
	977P	1102
	977P	1103
	977P	1104
	977P	1105
	977P	1106
	977P	1107
	977P	1108
	977P	1109
	977P	1110
	977P	1111
	977P	1112
	977P	1113
100	979P	1114	circular arc for surface to be offset by 140
110	981P	1115	line for surface to be offset by 140
	983P	1116	
118 F 0	985P	1117	ruled surface to be offset by 140
100	987P	1118	circular arc for surface for 140
110	989P	1119	line for surface for 140
	991P	1120	
118 F 0	993P	1121	ruled surface for 140

```
406,1,7HENTITY:
406,2,1,4HINCH;
406,2,22.0,17.0;
404,2,35,0.0,0.0,0.0,1063,0.0,0.0,0.0,0.3,995,997,999;
106,1,14,0.0,7.5,12.5,8.5,13.5,7.56096,12.8438,
8.1562,13.439,7.51181,12.6532,
8.3467,13.4882,7.64142,12.5,
8.5,13.3586,8.06569,12.5,8.5,
12.9343,8.20711,12.5,8.5,12.7929,
8.34853,12.5,8.5,12.6515;
106,1,16,0.0,9.5,12.783,10.217,13.5,9.783,12.5,
10.5,13.217,9.5,13.066,9.645,
13.211,9.790,13.355,9.934,13.5,
10.066,12.5,10.211,12.645,10.355,
12.79,10.5,12.934,9.5,13.349,
9.652,13.5,10.349,12.5,10.5,12.652;
106,1,12,0.0,1.5,13.2172,1.78284,13.5,1.5,
12.9343,2.06569,13.5,1.5,12.6515,
2.34853,13.5,1.63137,12.5,
2.5,13.3686,1.91421,12.5,2.5,13.0858,
2.19706,12.5,2.5,12.8029;
106,1,28,0.0,13.7513,12.5013,14.5,13.25,13.5013,
12.5013,14.5,13.5,14.5,13.0,
14.0013,12.5013,14.2513,12.5013,
14.5,12.75,13.5013,12.7513,
14.25,13.5,14.0,13.5,13.5013,13.0013,
13.5013,13.2513,13.75,13.5,
14.5,13.2525,14.2525,13.5,
14.0025,13.5,14.5,13.0025,14.5,
12.7525,13.7525,13.5,13.5025,13.5,
14.5,12.5025,14.2513,12.5013,
13.5013,13.2513,13.5013,
13.0013,14.0013,12.5013,
13.7513,12.5013,13.5013,12.7513;
106,1,14,0.0,3.5,13.25,3.75,13.5,3.5,13.0,
4.0,13.5,3.5,12.5,3.75,12.75,4.25,
13.25,4.5,13.5,3.75,12.5,4.0,
12.75,4.25,13.0,4.5,13.25,4.25,
12.5,4.5,12.75;
106,1,26,0.0,6.14612,12.5,6.5,12.8542,
5.5,12.7965,6.20279,13.5,5.5,67495,12.5,6.5,13.3259,
5.5,13.2682,5.73162,13.5,5.94108,12.5303,6.17678,12.766,
6.29463,12.8839,6.5,13.0893,5.5,12.5607,5.58752,12.6402,
5.70537,12.766,5.94107,13.0017,6.05893,13.1196,6.29463,13.3553,
6.41248,13.4731,6.43934,13.5,5.5,13.0321,5.70537,13.2374,
5.82322,13.3553,5.96794,13.5,6.38215,12.5,6.41248,12.5303;
106,1,30,0.0,11.7643,12.5,11.9857,12.7214,
12.1036,12.8393,12.3393,13.075,12.4571,13.1928,
12.5,13.2357,11.5286,12.5,11.75,12.7214,
11.8679,12.8393,12.1036,13.075,12.2214,13.1928,
12.4571,13.4285,11.5143,12.7214,11.75,12.9571,
11.8679,13.075,12.1036,13.3107,12.2214,13.4285,12.2929,13.5,
11.5,12.9428,11.5143,12.9571,11.6322,13.075,11.8679,13.3107,
11.9857,13.4285,12.0572,13.5,11.5,13.1785,11.5143,13.1928,
11.6322,13.3107,11.8215,13.5,11.5,13.4142,11.5858,13.5;
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995P	1122	406 F 15	drawing name
997P	1123	406 F 17	drawing units
999P	1124	406 F 16	drawing size
1001P	1125	404	drawing
1003P	1126	106 F 34	section 34
1003P	1127		
1003P	1128		
1003P	1129		
1003P	1130		
1003P	1131		
1005P	1132	106 F 35	section 35
1005P	1133		
1005P	1134		
1005P	1135		
1005P	1136		
1005P	1137		
1007P	1138	106 F 31	section 31
1007P	1139		
1007P	1140		
1007P	1141		
1007P	1142		
1009P	1143	106 F 37	section 37
1009P	1144		
1009P	1145		
1009P	1146		
1009P	1147		
1009P	1148		
1009P	1149		
1009P	1150		
1009P	1151		
1009P	1152		
1009P	1153		
1009P	1154		
1009P	1155		
1011P	1156	106 F 32	section 32
1011P	1157		
1011P	1158		
1011P	1159		
1011P	1160		
1013P	1161	106 F 33	section 33
1013P	1162		
1013P	1163		
1013P	1164		
1013P	1165		
1013P	1166		
1013P	1167		
1015P	1168	106 F 36	section 36
1015P	1169		
1015P	1170		
1015P	1171		
1015P	1172		
1015P	1173		
1015P	1174		
1015P	1175		
1015P	1176		

IGES parameter data section (sequence-numbered), with directory entity types and descriptions.

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106,1,42,0.0,16.2639,12.5,16.5,12.7363,
16.0283,12.5,16.5,12.9721,15.7927,12.5,16.5,13.208,
15.5572,12.5,16.5,13.4438,15.5,12.6786,16.3206,13.5,
15.5,12.9144,15.6303,13.0448,15.6871,13.1017,16.085,13.5,
15.5,12.7357,15.7214,12.5143,15.5,12.9714,15.7214,12.75,
15.8393,12.6321,15.9714,12.5,15.7214,12.9857,15.9571,12.75,
16.075,12.6321,16.2071,12.5,15.7593,13.1835,15.9571,12.9857,
16.075,12.8679,16.3107,12.6321,16.4285,12.5143,16.4428,12.5,
15.9571,13.2214,16.1928,12.9857,16.3107,12.8679,16.5,12.6785,
15.9648,13.4494,16.1928,13.2214,16.3107,13.1036,16.5,12.9142,
15.1928,13.4571,16.4285,13.2214,16.3856,13.5,16.4285,13.4571;
102,4,77,79,81,315;
228,727,2,221,309,0;
130,269,1,0,0.0,0.25,0.0,0.0,0.0,0.0,1.0,0.0,0.0,3.14;
140,0.0,0.324,-0.946,1.0,985;
100,0.0,4.0,7.25,4.25,7.25,4.25,7.25;
142,1,973,1027,1043,2;
0.0,0.0,0.1.0,-0.5,0;
142,1,969,1073,1075,2;
144,969,1,0,1033;
0,0.0,0.1.0,-0.5,0,2.0,11.0,-0.5,1.0;
212,3,2,0.2,0.125,1,1.5708,0.0,0.0,17.5,7.125,0.0,2HIM,3,0.3,
0.125,1002,1.5708,0.0,0.0,17.7,7.125,0.0,3Hbed,3,0.3,0.125,1,
1.5708,0.0,0.0,18.0,7.125,0.0,3HDED;
212,7,4,0.36,0.125,1,1.5708,0.0,0.0,15.125,5.25,0.0,4H     ,14,
1.42,0.125,1,1.5708,0.0,0.0,15.525,5.15625,0.0,14HBED         ACT
,8,0.8,0.125,1,1.5708,0.0,0.0,15.125,5.0625,0.0,8HIM -----,
3,0.3,0.125,1002,1.5708,0.0,0.0,15.925,5.0625,0.0,3H 1 ,7,0.7,
0.125,1,1.5708,0.0,0.0,16.225,5.0625,0.0,7HER -----,4,0.36,
0.125,1,1.5708,0.0,0.0,15.125,4.875,0.0,4H   ,
14,1.38,0.125,1,1.5708,0.0,0.0,15.525,4.96875,0.0,14HDED
ION;
112,3,1,3,7,0.0,1.0,2.0,3.0,4.0,5.0,6.0,7.0,3.817,0.183687,0.0,
3.91368E-03,7.42046,0.116096,-1.43051E-06,-0.0365138,0.582714,
0.26764,-2.68221E-07,-0.0384366,4.0046,0.195428,0.011741,
-0.0231148,7.50004,6.55174E-03,-0.109543,0.0169944,0.811917,
0.15233,-0.11531,-6.73003E-03,4.18865,0.149566,-0.0576034,
-0.034095,7.41404,-0.161551,-0.0585597,0.0144959,0.842207,
-0.0984805,-0.1355,7.67251E-04,4.24652,-0.0679259,-0.159888,
-0.0609804,7.20843,-0.235182,-0.0150719,0.0548643,0.608993,
-0.367179,-0.133198,0.11326,4.07969,-0.204761,0.0230529,
-0.0053852,7.01304,-0.100733,0.149521,-0.0375805,0.221876,
-0.293796,0.206582,-0.0375974,3.89259,-0.174811,6.89733E-03,
-0.0414561,7.02425,0.0855677,0.0367796,0.0150364,0.0970648,
6.57602E-03,0.0937898,0.0214335,3.76614,-0.036648,0.131266,
-0.043755,7.16163,0.204236,0.0818889,-0.0272963,0.218864,
0.258456,0.15809,-0.0526968,3.817,0.0946183,1.42306E-06,
-0.26253,7.42046,0.286125,0.0,-0.163778,0.582714,0.416546,
-1.71363E-07,-0.316181;
124,-1.0,0.0,0.0,3.5,0.0,1.0,0.0,15.0,0.0,0.0,0.0,-1.0,0.0,0;
110,1.5,11.0,0.0,2.0,11.75,0.0;
110,2.5,11.0,0.0,2.0,11.75,0.0;
406,1.1HB;
124,1.0,0.0,0.0,0.0,0.0,1.0,0.0,0.0,0.0,0.0,0.0,1.0,0.0,0;
108,1.0,0.0,0.0,0.1.0;
```

Seq	Ptr	Directory	Description
1177	1017P	106 F 38	section 38
1178	1017P		
1179	1017P		
1180	1017P		
1181	1017P		
1182	1017P		
1183	1017P		
1184	1017P		
1185	1017P		
1186	1017P		
1187	1017P		
1188	1019P	102	composite curve
1189	1021P	228 F 0	symbol - general
1190	1023P	130	offset curve
1191	1025P	140	offset surface
1192	1027P	100	circular arc for 142
1193	1029P	142	curve on parametric surface
1194	1031P		
1195	1033P	142	curve on parametric surface for 144
1196	1035P	144	trimmed parametric surface
1197	1037P		
1198	1039P	212 F 2	note - imbedded font change
1199	1039P		
1200	1039P		
1201	1041P	212 F 102	note - font/double fraction
1202	1041P		
1203	1041P		
1204	1041P		
1205	1041P		
1206	1041P		
1207	1041P		
1208	1041P		
1209	1043P	112	parametric spline for 142
1210	1043P		
1211	1043P		
1212	1043P		
1213	1043P		
1214	1043P		
1215	1043P		
1216	1043P		
1217	1043P		
1218	1043P		
1219	1043P		
1220	1043P		
1221	1043P		
1222	1043P		
1223	1043P		
1224	1043P		
1225	1043P		
1226	1045P	124 F 0	matrix for circular arc for 102
1227	1047P	110	left clipped line for 108 Form 0
1228	1049P	110	right clipped line for 108 Form 0
1229	1051P	406 F 15	clipping view name
1230	1053P	124 F 0	clipping view matrix
1231	1055P	108 F 0	clipping view plane with display symbol

```
108,0.0,1.0,0.0,11.5;                                                    1057P    1232
108,1.0,0.0,0.0,3.0;                                                     1059P    1233
108,0.0,1.0,0.0,10.0;                                                    1061P    1234
410,2,1.0,1055,1057,1059,1061,0,0,1,1051;                                1063P    1235
212,1,6,1.0,0.125,1,1.046,4.71,0,1,14.5,7.5,0.0,6HSIMPLE;                 1065P    1236
128,5,5,5,5,0,1,0,0,0,0.0,0.0,0.0,0.0,0.0,1.0,1.0,1.0,1.0,1.0,1.0,       1067P    1237
1.0,1.0,1.0,1.0,1.0,1.0,1.0,1.0,1.0,1.0,1.0,1.0,1.0,1.0,1.0,1.0,1.0,1.0, 1067P    1238
1.0,1.0,16.75,9.0,0.0,16.75,9.41076,0.0,15.9504,9.52056,                 1067P    1239
1.34712E-15,15.9504,8.47944,1.34712E-15,16.75,8.58924,                   1067P    1240
3.78452E-15,16.75,9.0,0.0,16.75,9.0,1.23228,16.75,9.41076,               1067P    1241
1.23228,15.9504,9.52056,-0.0815506,15.9504,8.47944,-0.0815506,           1067P    1242
16.75,8.58924,1.23228,16.75,9.0,1.23228,14.3511,9.0,1.56168,             1067P    1243
14.3511,9.41076,1.56168,16.1091,9.52056,-0.10335,16.1091,                1067P    1244
8.47944,-0.10335,14.3511,8.58924,1.56167,14.3511,9.0,1.56168,            1067P    1245
14.3511,9.0,-1.56168,14.3511,9.41076,-1.56168,16.1091,9.52056,           1067P    1246
0.10335,16.1091,8.47944,0.10335,14.3511,8.58924,-1.56167,                1067P    1247
14.3511,9.0,-1.56168,16.75,9.0,-1.23228,16.75,9.41076,-1.23228,          1067P    1248
15.9504,9.52056,0.0815506,15.9504,8.47944,0.0815506,16.75,               1067P    1249
8.58924,-1.23228,16.75,9.0,-1.23228,16.75,9.0,-9.41749E-07,              1067P    1250
16.75,9.41076,-9.41749E-07,15.9504,9.52056,6.23237E-08,15.9504,          1067P    1251
8.47944,6.23237E-08,16.75,8.58924,-9.41747E-07,16.75,9.0,                1067P    1252
-9.41749E-07,0.0,1.0,0.0,1.0,0;                                          1067P    1253
128,5,5,5,5,0,1,0,0,0,0.0,0.0,0.0,0.0,0.0,0.0,1.0,1.0,1.0,1.0,1.0,1.0,   1067P    1254
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1.0,1.0,14.5,9.0,0.0,14.5,9.82152,-1.89226E-15,12.9007,10.0411,          1069P    1257
-2.69424E-15,12.9007,7.95888,2.38352E-14,14.5,8.17848,                   1069P    1258
-3.78452E-15,14.5,9.0,0.0,-0.821519,14.5,9.82152,                        1069P    1259
-0.821518,12.9007,10.0411,1.80614,12.9007,7.95888,1.80614,14.5,          1069P    1260
8.17848,-0.821516,14.5,9.0,-0.821519,12.9007,9.0,-1.04112,               1069P    1261
12.9007,9.82152,-1.04112,16.4168,10.0411,2.28894,16.4168,                1069P    1262
7.95888,2.28894,12.9007,8.17848,-1.04111,12.9007,9.0,-1.04112,           1069P    1263
12.9007,9.0,1.04112,12.9007,9.82152,1.04112,16.4168,10.0411,             1069P    1264
-2.28893,16.4168,7.95888,-2.28894,12.9007,8.17848,1.04111,               1069P    1265
12.9007,9.0,1.04112,14.5,9.0,0.821519,14.5,9.82152,0.821519,             1069P    1266
12.9007,10.0411,-1.80614,12.9007,7.95888,-1.80614,14.5,8.17848,          1069P    1267
0.821517,14.5,9.0,0.821519,14.5,9.0,6.27833E-07,14.5,9.82152,            1069P    1268
6.27832E-07,12.9007,10.0411,-1.38031E-06,12.9007,7.95888,                1069P    1269
-1.38031E-06,14.5,8.17848,6.27831E-07,14.5,9.0,6.27833E-07,0.0,          1069P    1270
1.0,0.0,1.0,0;                                                           1069P    1271
128,3,3,3,2,0,1,0,0,0,0.0,0.0,0.0,0.0,0.0,1.0,1.0,1.0,1.0,0.0,0.0,       1069P    1272
0.0,1.0,0.0,2.0,0.0,2.0,0.0,1.0,1.0,1.0,1.0,1.0,1.0,1.0,1.0,1.0,1.0,1.0, 1069P    1273
1.0,1.0,1.0,1.0,18.5,9.0,1.0,18.5,8.83333,0.666667,18.5,                 1069P    1274
8.66667,0.333333,18.5,8.5,0.0,18.5,9.0,1.0,18.5,8.83333,                 1071P    1275
0.666667,18.5,8.66667,0.333333,18.5,8.5,0.0,17.5,10.0,1.0,17.5,          1071P    1276
9.83333,0.666667,17.5,9.66667,0.333333,17.5,9.5,0.0,17.5,9.0,            1071P    1277
1.0,17.5,8.83333,0.666667,17.5,8.66667,0.333333,17.5,8.5,0.0,            1071P    1278
0.0,1.0,0.0,0.2.0;                                                       1071P    1279
100,0.0,6.0,7.25,6.25,7.25,6.25,7.25;                                    1071P    1280
112,3,1,3,7,0.0,1.0,2.0,3.0,4.0,5.0,6.0,7.0,5.817,0.183686,             1071P    1281
7.15256E-07,3.91344E-03,7.42046,0.116096,-1.43051E-06,                   1071P    1282
-0.0365138,0.582714,0.26764,-2.60221E-07,-0.0384366,6.0046,              1073P    1283
                                                                         1075P    1284
                                                                         1075P    1285
                                                                         1075P    1286
```

Entity			Description
108	F	0	clipping view plane
108	F	0	clipping view plane
108	F	0	clipping view plane
410	F	0	clipping view
212	F	0	note - simple vertical
128	F	5	rational b-spline torus
128	F	4	rational b-spline sphere
128	F	9	rational b-spline general quadratic
100			circular arc for 142 for 144
112			parametric spline for 142 for 144

122

```
0.195428,0.011741,-0.0231148,7.50004,6.55174E-03,-0.109543,
0.0169944,0.811917,0.15233,-0.11531,-6.73003E-03,6.18865,
0.149566,-0.0576034,-0.034095,7.41404,-0.161551,-0.0585597,
0.0144959,0.842207,-0.0984805,-0.1355,7.67251E-04,6.24652,
-0.0679259,-0.159888,0.0609804,7.20843,-0.235182,-0.0150719,
0.0548643,0.608993,-0.367179,-0.133198,0.11326,6.07969,
-0.204761,0.0230529,-5.30516E-03,7.01304,-0.100733,0.149521,
-0.0375805,0.221876,-0.293796,0.206582,-0.0375974,5.89259,
-0.174811,6.89745E-03,0.041456,7.02425,0.0855677,0.0367796,
0.0150364,0.0970648,6.57602E-03,0.0937898,0.0214335,5.76614,
-0.0366479,0.131266,-0.0437549,7.16163,0.204236,0.0810009,
-0.0272963,0.218864,0.258456,0.15809,-0.0526968,5.817,0.0946183,
1.43051E-06,-0.26253,7.42046,0.286125,0.0,-0.163778,0.582714,
0.146546,-1.71363E-07,-0.316181;
110,0.0,-0.5,0.0,0.0,0.0,0.5,0.0;
110,0.0,-0.5,0.0,0.0,0.3,0.0,0.0;
110,0.0,-0.5,0.0,-0.3,0.0,0.0,0.0;
110,0.3,0.0,0.0,-0.3,0.0,0.0,0.0;
308,0,5HARROW,4,1077,1079,1081,1083;
124,0.0,1.0,0.0,2.0,-1.0,0.0,0.0,0.0,9.0,0.0,0.0,0.0,
1.0,0.0;
408,1085,0.0,0.0,0.0,0.0,1.0;
124,0.0,-1.0,0.0,4.0,-1.0,0.0,0.0,0.0,9.0,0.0,0.0,0.0,
1.0,0.0;
408,1085,0.0,0.0,0.0,0.0,1.0;
S       36G      4D   1094P      1311
```

			Description
1075P	1287		
1075P	1288		
1075P	1289		
1075P	1290		
1075P	1291		
1075P	1292		
1075P	1293		
1075P	1294		
1075P	1295		
1075P	1296		
1075P	1297		
1075P	1298		
1075P	1299		
1075P	1300	110	line for subfigure for 124
1077P	1301	110	line for subfigure for 124
1079P	1302	110	line for subfigure for 124
1081P	1303	110	line for subfigure for 124
1083P	1304	308	subfigure definition
1085P	1305	124 F 0	transformation matrix D-1
1087P	1306		
1087P	1307	408	subfigure instance for 124 Form 0
1089P	1308	124 F 1	transformation matrix D--1
1091P	1309		
1091P	1310	408	subfigure instance for 124 Form 1
1093P	1311		
T	1		

123

Attachment J

L-bracket IGES File Printout

The following text comprises the IGES Start (S) section, lines 1–39:

CONFORMANCE:	This IGES file comforms to the MIL-D-28000 Amendment 1 Class II subset (Engineering Drawings).
CREATED BY:	CALS Test Network
	Lawrence Livermore National Laboratory
	7000 East Ave., P.O. Box 808, L-542
	Livermore, CA 94550
	(415) 422-4357
DATE:	15 October 1988
PART NAME:	LBRACKT
DRAWING NAME:	LBRACKT
DESCRIPTION:	Reference drawing named L-bracket which is comprised of all the IGES structure entities (304-410) specified in MIL-D-28000 Class II. Contact the CALS Test Network to obtain procedures for conducting the test and evaluating the results.
REVISION:	C
DRAWING SIZE AND NUMBER:	One C-Size

PART LEVEL SCHEME:

LEVEL	ENTITY DESCRIPTION	MODE
defaulted	definition entities	model
1	geometric entities	model
2	dimension entities	draw
3	other detailing	draw
4	subfigure entities	model

Global (G) section, lines 1–3:

```
1H,,1H;,7HLBRACKT,7HLBRACKT,4HNONE,4HNONE,32,38,6,38,15,
7HLBRACKT,1.0,1,4HINCH,1,1.0,13H881015.080000,0.000001,22.0,
7HFARRELL,17HCALS TEST NETWORK,6,0;
```

Directory Entry (D) section, lines 1–13:

```
0    1    0    0    0    0    0    0    0    0    000000000D      1
0    0    0    0    0    0    0    0    0    0            0D      2
0    2    0    0    0    0    0    0    0    0    000000000D      3
0    0    0    1    0    0    0    0    0    0            0D      4
0    3    0    0    0    0    0    0    0    0    000000000D      5
0    0    0    1    0    0    0    0    0    0            0D      6
0    4    0    0    0    0    0    0    0    0    000000000D      7
0    0    0    1    0    0    0    0    0    0            0D      8
0    5    0    0    0    0    0    0    0    0    000000000D      9
0    0    0    1    0    0    0    0    0    0            0D     10
0    6    0    0    0    0    0    0    0    0    000000000D     11
0    0    0    1    0    0    0    0    0    0            0D     12
110  7    0    0    0    0    0    0    0    0    0000100001D     13
```

#		A	B	C	D	E	F	G
14	0D	43	0	0	1	0	0	110
15	000010001D	0	0	0	1	0	8	100
16	000010001D	43	0	0	1	0	0	100
17	0D	0	0	0	1	0	9	110
18	000010001D	43	0	0	1	0	0	110
19	0D	0	0	0	1	0	10	100
20	000010001D	43	0	0	1	0	0	100
21	0D	0	0	0	1	0	11	110
22	000010001D	0	0	0	1	0	0	110
23	0D	0	0	0	1	0	12	100
24	000010001D	0	0	0	1	0	0	100
25	0D	0	0	0	1	0	13	110
26	000010001D	0	0	0	1	0	0	110
27	0D	0	0	0	1	0	14	100
28	000010001D	0	0	0	1	0	0	110
29	0D	0	0	0	1	0	15	110
30	000010001D	0	0	0	1	0	0	110
31	0D	0	0	0	1	0	16	110
32	000010001D	0	0	0	1	0	0	110
33	0D	0	0	0	1	0	17	110
34	000010001D	0	0	0	1	0	0	110
35	0D	0	0	0	1	0	18	308
36	000000201D	0	0	0	0	0	0	308
37	0D	0	0	0	2	0	19	0
38	000000001D	0	0	0	0	0	0	0
39	0D	0	0	0	1	0	21	124
40	000000001D	0	0	0	0	0	0	124
41	0D	0	0	0	1	0	22	124
42	000000001D	0	0	0	0	0	0	124
43	0D	0	0	0	1	0	23	0
44	000000001D	0	0	0	0	0	0	0
45	0D	0	0	0	1	0	24	0
46	000000001D	0	0	0	0	0	0	0
47	0D	0	0	0	2	0	26	0
48	000000001D	0	0	0	0	0	0	0
49	0D	0	0	0	1	0	27	0
50	000000001D	0	0	0	0	0	0	406
51	0D	0	0	15	1	0	28	406
52	000020001D	0	0	0	0	0	0	124
53	0D	0	0	0	1	0	29	124
54	000000001D	0	0	0	0	0	0	108
55	0D	0	0	0	2	0	30	108
56	000010001D	0	0	0	2	0	0	108
57	0D	0	0	0	1	0	32	108
58	000010001D	0	0	0	2	0	0	108
59	0D	0	0	0	1	0	33	108
60	000010001D	0	0	0	2	0	0	108
61	0D	0	0	0	1	0	34	108
62	000010001D	0	0	0	2	0	0	410
63	0D	0	0	0	1	0	35	410
64	000020201D	55	0	0	0	0	36	410
65	0D	0	0	0	2	0	0	406
66	00020001D			0	0	0	38	406
67	0D			15	1	0	0	

#	Code	(c)	(d)	(e)	(f)	(g)	(h)
69	000000001D	0	0	0	0	0	39
70	0D	0	0	0	1	0	0
71	000010001D	0	0	0	2	0	40
72	0D	0	0	0	1	0	0
73	000010001D	0	0	0	2	0	41
74	0D	0	0	0	1	0	0
75	000010001D	0	0	0	2	0	42
76	0D	0	0	0	1	0	0
77	000010001D	0	0	0	2	0	43
78	0D	0	0	0	1	0	0
79	000020201D	69	0	15	0	0	44
80	0D	0	0	0	1	0	0
81	000010001D	0	0	0	0	0	45
82	0D	0	0	0	1	0	0
83	000000001D	0	0	0	0	0	46
84	0D	0	0	0	1	0	0
85	000010001D	0	0	0	2	0	47
86	0D	0	0	0	1	0	0
87	000010001D	0	0	0	2	0	48
88	0D	0	0	0	1	0	0
89	000010001D	0	0	0	2	0	49
90	0D	0	0	0	1	0	0
91	000010001D	0	0	0	2	0	50
92	0D	0	0	0	1	0	0
93	000020201D	83	0	15	2	0	51
94	0D	0	0	0	1	0	0
95	000020001D	0	0	0	0	0	52
96	0D	0	0	0	1	0	0
97	000000001D	0	0	0	0	0	53
98	0D	0	0	0	1	0	0
99	000010001D	0	0	0	0	0	54
100	0D	0	0	0	1	0	0
101	000010001D	0	0	0	2	0	55
102	0D	0	0	0	1	0	0
103	000010001D	0	0	0	2	0	56
104	0D	0	0	0	1	0	0
105	000010001D	0	0	0	2	0	57
106	0D	0	0	0	1	0	0
107	000020201D	97	303	0	2	0	58
108	0D	0	0	0	1	0	0
109	000000001D	0	0	1	0	0	59
110	0D	0	0	0	1	0	0
111	000000001D	0	0	1	1	0	60
112	0D	0	0	0	1	0	0
113	000000001D	0	0	1	1	0	61
114	0D	0	0	0	1	0	0
115	000000001D	0	0	1	1	0	62
116	0D	0	0	0	1	0	0
117	000000001D	0	0	1	1	0	63
118	0D	0	0	0	1	0	0
119	000000001D	0	0	1	1	0	64
120	0D	0	0	0	1	0	0
121	000000001D	41	0	1	1	0	65
122	0D	0	0	0	1	0	0
123	000000001D	0	0	1	1	0	66

Bottom row values:
124, 124, 108, 108, 108, 108, 108, 108, 108, 410, 410, 406, 406, 124, 124, 108, 108, 108, 108, 108, 108, 410, 410, 406, 406, 110, 110, 110, 110, 110, 110, 110, 410, 410, 110, 110, 110, 110, 110, 110, 110, 110, 110, 110, 100, 100, 110

Index	Value		
124	0D		
125	000000001D	41	
126	0D		303
127	000000001D		
128	0D		
129	000010101D		
130	0D		
131	000000001D		
132	0D		
133	000000001D		
134	0D		
135	000000001D		
136	0D		
137	000000001D		
138	0D		
139	000000001D		
140	0D		
141	000000001D		
142	0D		
143	000010101D		
144	0D		
145	000000001D		
146	0D		
147	000000001D		
148	0D		
149	000000001D		
150	0D		327
151	000000001D		327
152	0D		
153	000000001D		327
154	0D		
155	000000001D		
156	0D		
157	000000001D		
158	0D		
159	000010101D		
160	0D		
161	000010101D		
162	0D		
163	000010101D		
164	0D		
165	000010101D		
166	0D		
167	000010101D		
168	0D		
169	000010101D		
170	0D		
171	000000001D		
172	0D		
173	000000001D		
174	0D		
175	000000001D		
176	0D		
177	000000201D		
178	0D		

128

Idx	Code	A	B	C	D	E	F	G
179	000020001D	0	303	1	1	0	98 0	110 110
180	0D	0	0	0	1	0	99 0	0 0
181	000000001D	0	0	0	0	0	100 0	0
182	0D	43	303	0	1	0	101 0	100 100
183	000000001D	0	0	0	0	0	102 0	0
184	0D	0	343	0	1	0	103 0	110 110
185	000020001D	0	0	1	1	0	104 0	0
186	0D	43	303	0	1	0	105 0	100 100
187	000000001D	0	0	0	0	0	106 0	110 110
188	0D	43	343	1	1	0	107 0	100 100
189	000020001D	0	0	0	1	0	108 0	110 110
190	0D	43	343	0	1	0	109 0	100 100
191	000000001D	0	343	1	1	0	110 0	110 110
192	0D	0	0	0	0	0	111 0	100 100
193	000020001D	0	343	0	1	0	112 0	0
194	0D	0	343	1	1	0	113 0	0
195	000020001D	0	343	0	1	0	114 0	110 110
196	0D	0	0	1	1	0	115 0	110 110
197	000020001D	0	343	0	1	0	116 0	110 110
198	0D	0	343	1	1	0	117 0	110 110
199	000020001D	0	343	0	1	0	118 0	110 110
200	0D	0	0	1	0	0	119 0	110 110
201	000020001D	0	343	0	1	0	120 0	110 110
202	0D	0	343	1	1	0	121 0	0
203	000000001D	0	0	0	1	0	122 0	0
204	0D	0	343	3	1	0	127 0	0
205	000020001D	0	343	0	1	0	128 0	110 110
206	0D	0	343	3	1	0	129	110 110
207	000020001D	0	343	0	1	0		110 110
208	0D	0	0	3	-341	0		110 110
209	000020001D	0	0	0	1	0		110 110
210	0D	0	0	3	-341	0		110 110
211	000020001D	0	0	0	1	0		0
212	0D	0	0	3	-341	0		0
213	000000001D	0	0	0	1	0		0
214	0D	0	0	3	-369	0		0
215	000000001D	0	0	0	1	0		110 110
216	0D	0	0	3	-369	0		110 110
217	000010101D	0	0	0	1	0		110 110
218	0D	0	0	3	5	0		110 110
219	000010101D	0	0	1	1	0		110 110
220	0D	0	0	0	1	0		110 110
221	000010101D	0	0	1	1	0		110 110
222	0D	0	0	2	1	0		112 112
223	000010101D	0	303	0	1	0		112 112
224	0D	0	0	2	1	5		110 110
225	000010101D	0	0	2	1	0		110 110
226	0D							0
227	000010101D							0
228	0D		303					0
229	000000001D							
230	0D							
231	000010101D							
232	0D							
233	000010101D							

129

234	0D	000010101D							
235	0D	000010101D	0	0	0	1	5	0	0
236	0D	000010101D			2	1	0	130	0
237	0D	000010101D	0	0	0	1	5	0	0
238	0D	000010101D			2	1	0	131	0
239	0D	000010101D	0	0	0	1	5	0	0
240	0D	000010101D			2	1	0	132	0
241	0D	000010101D	0	0	0	1	5	0	0
242	0D	000010101D			2	1	0	133	0
243	0D	000010101D	0	0	0	1	5	0	0
244	0D	000010101D			2	1	0	134	0
245	0D	000010101D	0	0	0	1	5	0	0
246	0D	000010101D			2	1	0	135	0
247	0D	000010101D	0	0	0	1	5	0	212
248	0D	000010101D			2	1	0	136	212
249	0D	000010101D	0	0	0	1	5	0	214
250	0D	000010101D			2	1	0	137	214
251	0D	000010101D	0	0	0	1	5	0	214
252	0D	000010101D			2	1	0	138	214
253	0D	000010101D	0	0	0	1	5	139	106
254	0D	000010101D			2	0	0	0	106
255	0D	000010101D	0	0	2	1	5	140	106
256	0D	000010101D			2	1	0	0	216
257	0D	000010101D	0	0	40	1	5	141	216
258	0D	000010101D			2	0	0	0	212
259	0D	000010101D	0	0	40	1	5	142	212
260	0D	000010101D			2	0	0	0	214
261	0D	000010101D	0	0	0	1	5	143	214
262	0D	000010101D			2	1	0	0	222
263	0D	000010101D	0	0	0	1	5	144	222
264	0D	000010101D			2	0	0	0	212
265	0D	000010101D	0	0	2	1	5	145	212
266	0D	000010101D			0	1	0	0	214
267	0D	000010101D	0	0	2	1	5	146	214
268	0D	000010101D			0	0	0	0	214
269	0D	000010101D	0	0	2	1	5	147	214
270	0D	000010101D			2	1	0	0	106
271	0D	000010101D	0	0	2	1	5	148	106
272	0D	000010101D			40	1	0	0	106
273	0D	000010101D	0	0	2	0	5	149	216
274	0D	000010101D			40	1	0	0	216
275	0D	000010101D	0	0	2	1	5	150	212
276	0D	000010101D			0	1	0	151	212
277	0D	000010101D	0	0	2	0	5	0	214
278	0D	000010101D			2	1	0	152	214
279	0D	000010101D	0	0	2	1	5	0	106
280	0D	000010101D			2	0	0	153	106
281	0D	000010101D	0	0	0	2	5	0	212
282	0D	000010101D			2	1	0	154	212
283	0D	000010101D	0	0	2	1	5	0	214
284	0D	000010101D			2	1	0	156	214
285	OF,	000010101D	0	0	2	1	5	0	206
286	000010101L'							157	206
287	0D				0	1	5	0	
288									

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Idx	Code						Idx2	Value
289	000010101D	0	0	2	0	0	158	212
290	0D	0	0	0	1	5	0	212
291	000010101D	0	0	2	1	0	159	214
292	0D	0	0	2	1	5	0	214
293	000010101D	0	0	2	1	0	160	214
294	0D	0	0	2	1	5	0	106
295	000010101D	0	0	40	0	0	161	106
296	0D	0	0	2	1	5	0	106
297	000010101D	0	0	40	0	0	162	216
298	0D	0	0	2	1	5	0	216
299	000010101D	0	0	0	1	0	163	106
300	0D	0	0	3	1	5	0	106
301	000010101D	0	0	31	0	0	164	402
302	0D	0	0	0	4	-325	0	402
303	000000201D	0	0	3	0	0	168	0
304	0D	0	0	0	1	0	0	0
305	000000001D	0	0	0	0	0	169	408
306	0D	0	303	-329	1	0	0	408
307	000000001D	0	0	0	0	0	170	406
308	0D	0	0	15	1	0	0	406
309	000020001D	0	0	0	0	0	171	406
310	0D	0	0	17	1	0	0	406
311	000020001D	0	0	0	0	0	172	406
312	0D	0	0	16	1	0	0	406
313	000020001D	0	0	3	-341	0	173	110
314	0D	0	0	0	1	0	0	110
315	000010101D	0	0	3	-341	0	174	110
316	0D	0	0	0	1	0	0	110
317	000010101D	0	0	3	-341	0	175	110
318	0D	0	0	0	1	0	0	0
319	000010101D	0	0	0	0	0	176	0
320	0D	0	0	0	3	0	0	402
321	000000201D	0	0	0	0	0	177	402
322	0D	0	0	15	1	0	0	314
323	000000201D	0	0	0	0	0	180	314
324	0D	0	0	0	1	0	0	402
325	000000201D	0	0	0	0	0	181	402
326	0D	0	0	4	1	0	0	406
327	000000201D	0	0	0	0	0	182	406
328	0D	0	0	1	1	0	0	406
329	000000001D	0	0	0	0	0	183	406
330	0D	0	0	3	1	0	0	406
331	000000001D	0	0	0	0	0	184	406
332	0D	0	0	3	1	0	0	406
333	000000001D	0	0	0	0	0	185	406
334	0D	0	0	3	1	0	0	406
335	000000001D	0	0	0	0	0	186	406
336	0D	0	0	3	1	0	0	406
337	000000001D	0	0	0	0	0	187	406
338	0D	0	0	5	1	0	0	406
339	000020001D	0	0	0	1	0	188	406
340	0D	0	0	2	1	0	0	304
341	000000201D	0	0	0	0	0	189	304
342	0D	0	0			0	0	402
343	000000201D	0	0			0	190	

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Entity and Form Number	Entity Description on L-bracket Drawing
110	line 1 for subfigure slot
100	circular arc 2 for subfigure slot
110	line 3 for subfigure slot
100	circular arc 4 for subfigure slot
110	line 5 for subfigure slot
100	circular arc 6 for subfigure slot
110	line 7 for subfigure slot
100	circular arc 8 for subfigure slot
110	line 9 for subfigure slot
110	line 10 for subfigure slot
110	line 11 for subfigure slot
110	line 12 for subfigure slot
308	subfigure definition
124 F 0	matrix for fillet
124 F 0	matrix for slot

```
1P    1
3P    2
5P    3
7P    4
9P    5
11P   6
13P   7
15P   8
17P   9
19P   10
21P   11
23P   12
25P   13
27P   14
29P   15
31P   16
33P   17
35P   18
37P   19
37P   20
39P   21
41P   22
43P   23
45P   24
45P   25
47P   26
49P   27
51P   28
```

```
                                       0D        344
110  192  0  2  3   000010101D         345
110    0  0  1  3          0D           346
110  193  0  1  0   000010101D         347
110    0  0  1  3          0D           348
110  194  0  1  0   000010101D         349
110    0  0  1  3          0D           350
110  195  0  1  0   000010101D         351
110    0  0  1  3          0D           352
110  196  0  1  0   000010101D         353
110    0  0  1  3          0D           354
110  197  0  1  0   000010101D         355
110    0  0  1  3          0D           356
212  198  0  1  0   000010101D         357
212    0  0  0  3          0D           358
110  204  0  6  0   000010101D         359
110    0  0  1  1          0D           360
110  205  0  1  0   000010101D         361
110    0  0  1  1          0D           362
404  206  0  0  0   000000201D         363
404    0  0  4  0          0D           364
110  210  0  1  0   000010101D         365
110    0  0  1  1          0D           366
308  211  0  0  0   000020201D         367
308    0  0  0  0          0D           368
304  212  0  1  1   000000201D         369
304    0  0  1  1          0D           370
```

```
0;
0;
0;
0;
0;
0;
110,1.0,1.0,3.2,1.0,3.0,3.2;
100,1.0,3.0,3.0,2.8,3.0,2.8,3.0,3.2;
110,1.0,1.0,2.8,1.0,3.0,2.8;
100,1.0,3.0,1.0,3.2,1.0,2.8,3.0,2.8;
110,0.75,1.0,2.8,0.75,3.0,2.8;
100,0.75,1.0,3.0,1.0,3.2,1.0,2.8;
110,0.75,1.0,3.2,0.75,3.0,3.2;
100,0.75,3.0,3.0,2.8,3.0,3.2;
110,1.0,1.0,2.8,0.75,1.0,2.8;
110,1.0,3.0,2.8,0.75,3.0,2.8;
110,1.0,1.0,3.2,0.75,1.0,3.2;
110,1.0,3.0,3.2,0.75,3.0,3.2;
308,0.6HSUBFIG,12,13,15,17,19,21,23,25,27,29,31,33,
35;
0;
124,1.0,0.0,0.0,0.0,0.0,0.0,0.0,-1.0,0.0,0.0,0.0,1.0,0.0,0.0,0.0;
124,0.0,0.0,1.0,0.0,0.0,0.0,1.0,0.0,0.0,0.0,0.0,1.0,0.0,0.0,0.0;
0.0,
0;
0;
0;
0;
```

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```
406,1,3HISO;
124,0.707107,0.707107,0.0,0.0,-0.408248,0.408248,0.816497,0.0,
0.57735,-0.57735,0.57735,0.0;
108,0.707107,0.707107,0.0,0.0,-3.0;
108,-0.408248,0.408248,0.816497,7.0;
108,0.707107,0.707107,0.0,10.0;
108,-0.408248,0.408248,0.816497,-2.0;
410,6,1.0,57,59,61,63,0,3,303,343,327,1,
53;
406,1,4HSIDE;
124,0.0,1.0,0.0,0.0,0.0,0.0,1.0,0.0,1.0,0.0,0.0,0.0;
108,0.0,1.0,0.0,0.0,-3.0;
108,0.0,0.0,1.0,5.0;
108,0.0,1.0,0.0,10.0;
108,0.0,0.0,1.0,-3.0;
410,5,1.0,71,73,75,77,0,0,2,303,343,343,1,67;
406,1,3HTOP;
124,1.0,0.0,0.0,0.0,0.0,0.0,1.0,0.0,0.0,0.0,0.0,0.0;
108,1.0,0.0,0.0,0.0,-3.0;
108,0.0,1.0,0.0,0.0,7.0;
108,1.0,0.0,0.0,0.0,6.0;
108,0.0,1.0,0.0,0.0,-2.0;
410,4,1.0,85,87,89,91,0,0,1,327,1,81;
406,1,5HFRONT;
124,1.0,0.0,0.0,0.0,0.0,0.0,1.0,0.0,0.0,0.0,-1.0,0.0,0.0,0.0;
108,1.0,0.0,0.0,0.0,-3.0;
108,0.0,0.0,1.0,5.0;
108,1.0,0.0,0.0,0.0,6.0;
108,0.0,0.0,1.0,-3.0;
410,3,1.0,99,101,103,105,0,0,1,343,1,95;
110,0.0,0.0,0.0,0.0,3.0,0.0,0.0;
110,3.0,0.0,0.0,3.0,0.0,0.0,0.75;
110,3.0,0.0,0.0,0.75,1.1,0.0,0.0,0.75;
110,1.0,0.0,0.0,0.85,1.0,0.0,0.3.5;
110,0.0,0.0,4.0,3.5,1.0,4.0,3.5;
110,0.0,0.0,3.5,0.0,0.0,0.0,0.0;
100,0.0,0.0,1.1,0.85,1.0,0.85,1.1,0.75;
110,3.0,4.0,0.75,1.1,4.0,0.0,0.75;
100,-4.0,1.1,0.85,1.0,0.85,1.1,0.75;
110,1.0,0.0,0.85,1.0,0.0,3.5;
106,2,12,0.0,5.0,12.63,5.0,12.13,5.0,12.06,5.0,11.94,5.0,11.88,
5.,11.38,4.38,12.,4.88,12.,4.94,12.,5.06,12.,5.13,12.,5.63,12.;
110,0.0,0.0,3.5,0.0,0.0,0.0,0.0;
110,3.0,4.0,0.3.5,0.0,4.0,0.0;
110,3.0,0.0,0.75,3.0,4.0,0.75;
110,1.1,0.0,0.75,1.1,4.0,0.75;
110,1.0,0.0,0.85,1.0,4.0,0.85;
0,1,6,0.0,4.375,12.0,4.875,12.0,4.9375,12.0,5.0625,12.0,
5.125,12.0,5.625,12.0;
110,0.0,0.0,0.0,4.0,0.0;
110,3.0,0.0,0.0,3.0,4.0,0.0;
0;
100,0.0,0.2.0,2.0,2.25,2.0,2.25,2.0;
100,0.75,2.0,2.0,2.25,2.0,2.25,2.0;
```

P	seq	type	description
53P	29	406 F 15	isometric view name
55P	30	124 F 0	isometric view matrix
55P	31		
57P	32	108 F 0	isometric view plane
59P	33	108 F 0	isometric view plane
61P	34	108 F 0	isometric view plane
63P	35	108 F 0	isometric view plane
65P	36	410	isometric view
65P	37		
67P	38	406 F 15	side view name
69P	39	124 F 0	side view matrix
71P	40	108 F 0	side view plane
73P	41	108 F 0	side view plane
75P	42	108 F 0	side view plane
77P	43	108 F 0	side view plane
79P	44	410	side view
81P	45	406 F 15	top view name
83P	46	124 F 0	top view matrix
85P	47	108 F 0	top view plane
87P	48	108 F 0	top view plane
89P	49	108 F 0	top view plane
91P	50	108 F 0	top view plane
93P	51	410	top view
95P	52	406 F 15	front view name
97P	53	124 F 0	front view matrix
99P	54	108 F 0	front view plane
101P	55	108 F 0	front view plane
103P	56	108 F 0	front view plane
105P	57	108 F 0	front view plane
107P	58	410	front view
109P	59	110	line 1
111P	60	110	line 2
113P	61	110	line 3
115P	62	110	line 4
117P	63	110	line 5
119P	64	110	line 6
121P	65	100	circular arc for fillet 1
123P	66	110	line 7
125P	67	100	circular arc for fillet 2
127P	68	110	line 8
129P	69	106 F 21	centerline - thru centers
129P	70	110	line 9
131P	71	110	line 10
133P	72	110	line 11
135P	73	110	line 12
137P	74	110	line 13
139P	75	110	line 14
141P	76	110	
143P	77	110	line 15
143P	78		line 16
145P	79	110	
147P	80	110	
149P	81		
151P	82	100	circular arc for bottom of hole
153P	83	100	circular arc for top of hole

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```
0;
110,2.25,2.0,0.0,2.25,2.0,0.75;
110,4.75,3.75,0.0,4.75,3.0,0.0;
110,5.25,3.75,0.0,5.25,3.0,0.0;
110,13.75,3.75,0.0,13.75,3.0,0.0;
110,14.25,3.75,0.0,14.25,3.0,0.0;
106,1,6,0.0,5.0,4.0,5.0,3.5,5.0,3.4375,5.0,3.25,
5.0,2.75;
106,1,6,0.0,14.0,4.0,14.0,3.5,14.0,3.4375,14.0,3.3125,14.0,
3.25,14.0,2.75;
110,0.0,0.0,3.5,1.0,0.0,3.5;
110,0.0,0.0,3.5,0.0,4.0,3.5;
110,1.0,0.0,3.5,1.0,4.0,3.5;
0,3,0,65,79,107;
110,1.0,1.0,3.2,1.0,3.0,3.2;
0;
100,1.0,3.0,3.0,3.0,2.8,3.0,3.2;
0;
110,1.0,1.0,2.8,1.0,3.0,2.8;
0;
100,1.0,1.0,3.0,1.0,3.2,1.0,2.8;
110,0.75,1.0,2.8,0.75,3.0,2.8;
100,0.75,1.0,3.0,1.0,3.2,1.0,2.8;
110,0.75,1.0,3.2,0.75,3.0,3.2;
100,0.75,3.0,3.0,3.0,2.8,3.0,3.2;
0;
110,1.0,1.0,2.8,0.75,1.0,2.8;
110,1.0,3.0,2.8,0.75,3.0,2.8;
110,1.0,1.0,3.2,0.75,1.0,3.2;
110,1.0,3.0,3.2,0.75,3.0,3.2;
0;
0;
110,3.75,10.8,0.0,4.0,10.8,0.0;
110,3.75,13.2,0.0,4.0,13.2,0.0;
110,3.75,5.2,0.0,3.75,4.8,0.0;
110,3.75,4.8,0.0,4.0,4.8,0.0;
110,3.75,5.2,0.0,4.0,5.2,0.0;
112,3,1,3,2,0.0,1.0,2.0,3.0,0.500001,-1.07288E-06,3.57628E-07,
5.0,0.65,-7.15256E-07,-0.149999,0.0,0.0,0.0,0.0,3.5,0.5,0.0,
-1.19209E-07,5.5,0.200001,-0.449999,0.0,0.0,0.0,0.0,
4.0,0.5,-7.15256E-07,-7.15256E-07,5.4,-0.250002,-7.15256E-06,
0.899991,0.0,0.0,0.0,0.0,0.0;
0,1,0,1,0.2,8,1.0,1.0,2.2,2.0,1,339;
0,1,0.15,0.05,0.0,12.0,2.0,13.5,2.0;
0,1,0.15,0.05,0.0,16.0,2.0,14.5,2.0;
0,1,3.0,0.12,0.0,3.0,12.0,2.9,12.0,1.9;
0,1,3.0,0.16,0.0,16.0,2.9,16.0,1.9;
0,229,231,233,235,237;
0,1,5,0.8,0.2,1,1.5708,0.0,0.0,0.0,4.1,1.9,0.0,0.5H3.000;
0,1,0.15,0.05,0.0,3.0,2.0,4.0,2.0;
0,1,0.15,0.05,0.0,6.0,2.0,5.0,2.0;
0,1,3.0,0.3,0.0,2.9,3.0,1.9;
0,1,3.0,0.6,0.0,6.0,2.9,6.0,1.9;
0,241,243,245,247,249;
```

Seq	Pointer	Type	Comment
84	155P	110	line connecting circular arcs of hole
85	157P	110	dashed line 9
86	159P	110	dashed line 10
87	161P	110	dashed line 11
88	163P	110	dashed line 12
89	165P	110	
90	167P	106 F 20	centerline 3 – thru points
91	167P		
92	169P	106 F 20	centerline 4 – thru points
93	169P		
94	171P	110	line 17
95	173P	110	line 18
96	175P	110	line 19
97	177P		
98	179P	110	line 1 for slot
99	181P		
100	183P		
101	185P	100	circular arc 2 for slot
102	187P		
103	189P	110	line 3 for slot
104	191P		
105	193P	100	circular arc 4 for slot
106	195P	110	line 5 for slot
107	197P	100	circular arc 6 for slot
108	199P	110	line 7 for slot
109	201P	100	circular arc 8 for slot
110	203P		
111	205P	110	line 9 for slot
112	207P	110	line 10 for slot
113	209P	110	line 11 for slot
114	211P	110	line 12 for slot
115	213P		
116	215P		
117	217P	110	dashed line 1
118	219P	110	dashed line 2
119	221P	110	dashed line 3
120	223P	110	dashed line 4
121	225P	110	dashed line 5
122	227P	112	spline
123	227P		
124	227P		
125	227P		
126	227P		
127	229P	110	line for strip of metalization
128	231P		
129	233P		
130	235P		
131	237P		
132	239P		
133	241P		
134	243P		
135	245P		
136	247P		
137	249P		
138	251P		

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Parameter Data section:

```
212,1,5,0.8,0.2,1,1.5708,0.0,0.0,3.1,7.4,0.0,5H1.000;
214,1,0.15,0.05,0.0,3.0,7.5,2.8,7.5;
214,1,0.15,0.05,0.0,4.0,7.5,4.2,7.5;
106,1,3,0.0,3.0,6.5,3.0,6.6,3.0,7.6;
106,1,3,0.0,4.0,6.5,4.0,6.6,4.0,7.6;
216,253,255,257,259,261;
212,1,6,0.96,0.2,1,1.5708,0.0,0.0,5.6,4.9,0.0,6HR .100;
214,1,0.15,0.05,0.0,4.03837,3.77125,5.0,5.0,5.5,5.0;
222,265,267,4,1,3.85;
212,1,5,0.8,0.2,1,1.5708,0.0,0.0,3.6,8.9,0.0,5H2.000;
214,1,0.15,0.05,0.0,3.0,9.0,3.5,9.0;
214,1,0.15,0.05,0.0,5.0,9.0,4.5,9.0;
106,1,3,0.0,3.0,10.0,3.0,9.9,3.0,8.9;
106,1,3,0.0,5.0,11.375,5.0,11.275,5.0,8.9;
216,271,273,275,277,279;
212,1,2,0.16,0.2,1001,1.5708,0.0,0.0,7.1,10.4,0.0,1Hn,4,
0.64,0.2,1,1.5708,0.0,0.0,7.42,10.4,0.0,4H.500;
214,2,0.15,0.05,0.0,5.17678,11.8232,6.5,10.5,7.0,10.5;
206,283,285,0.5,0.0,12.0;
212,1,4,0.64,0.2,1,1.5708,0.0,0.0,6.68,3.265,0.0,4H.750;
214,1,0.15,0.05,0.0,7.0,3.0,7.0,2.8;
214,1,0.15,0.05,0.0,7.0,3.75,7.0,3.95;
106,1,3,0.0,6.0,3.0,6.1,3.0,7.1,3.0;
106,1,3,0.0,6.0,3.75,6.1,3.75,7.1,3.75;
216,289,291,293,295,297;
106,1,16,0.0,3.0,6.21716,3.28284,6.5,3.0,5.93431,3.56569,6.5,
3.0,5.65147,3.84853,6.5,3.36863,3.75,6.11863,3.83137,6.2,
4.0,6.36863,3.0,5.08579,3.75,5.83579,3.71121,5.51415,3.99706,
5.8,3.91937,5.43947,4.0,5.5201;
402,2,5,65,79,307,115,127,185,193;
0;
408,37,0.0,0.0,-1.0,1.0;
406,1,7HLBRACKT;
406,2,1,4HINCH;
406,2,22.0,17.0;
110,3,75,10.8,0.0,0.0,3.75,13.2,0.0;
110,3,75,11.0,0.0,0.0,4.0,11.0,0.0;
110,3,75,13.0,0.0,0.0,4.0,13.0,0.0;
0,4,107,3.0,3.0,93,3.0,10.0,79,12.0,3.0,65,12.0,10.0,32,129,
227,143,239,251,263,159,161,163,165,167,169,269,281,287,299,217,
219,301,221,223,225,317,319,315,0,3,309,311,313;
402,12,179,185,189,193,195,197,199,201,205,207,209,211;
314,60.0,0.0,40.0,7HMAGENTA;
402,3,65,1,0,6,0,93,1,0,3,0,157,151,153;
406,2,1,4;
406,2,1,14HMODEL ENTITIES;
406,2,2,18HDIMENSION ENTITIES;
406,2,3,15HOTHER DETAILING;
406,2,4,18HSUBFIGURE ENTITIES;
406,5,0.1,1,0,2,0.0;
304,2,0.1,0.1,1H2;
402,3,10,65,79,107,179,189,195,197,199,201,205,207,
209,211;
110,1,0,1,0,0.0,21.0,1,0,0.0;
110,21.0,1.0,0.0,21.0,16.0,0.0;
```

Line	P-Pointer	DE Type	Description
139	253P	212 F 0	text for dimension 1.000
140	255P	214 F 2	left leader for dimension 1.000
141	257P	214 F 2	right leader for dimension 1.000
142	259P	106 F 40	left witness line for dimension 1.000
143	261P	106 F 40	right witness line for dimension 1.000
144	263P	216	linear dimension 1.000
145	265P	212 F 0	text for dimension R .100
146	267P	214 F 2	leader for dimension R .100
147	269P	222	radius dimension
148	271P	212 F 0	text for dimension 2.000
149	273P	214 F 2	left leader for dimension 2.000
150	275P	214 F 2	right leader for dimension 2.000
151	277P	106 F 40	left witness line for dimension 2.000
152	279P	106 F 40	right witness line for dimension 2.000
153	281P	216	linear dimension 2.000
154	283P	212 F 0	text for dimension 2.000
155	283P		
156	285P	214 F 2	leader for dimension m.500
157	287P	206	diameter dimension
158	289P	212 F 0	text for dimension .750
159	291P	214 F 2	bottom leader for dimension .750
160	293P	214 F 2	top leader for dimension .750
161	295P	106 F 40	bottom witness line for dimension .750
162	297P	106 F 40	top witness line for dimension .750
163	299P	216	linear dimension .750
164	301P	106 F 31	crosshatching
165	301P		
166	301P		
167	301P		
168	303P	402 F 3	views visible
169	305P		
170	307P	408	subfigure instance
171	309P	406 F 15	drawing name
172	311P	406 F 17	drawing units
173	313P	406 F 16	drawing size
174	315P	110	dashed line 6
175	317P	110	dashed line 7
176	319P	110	dashed line 8
177	321P	402 F 15	ordered group without back pointers
178	321P		
179	321P		
180	323P	314	color definition
181	325P	402 F 4	views visible, color, line weight
182	327P	406 F 1	definition levels
183	329P	406 F 3	level function 1
184	331P	406 F 3	level function 2
185	333P	406 F 3	level function 3
186	335P	406 F 3	level function 4
187	337P	406 F 5	line widening
188	339P	304 F 2	line font - repeating visible/blank
189	341P	402 F 3	views visible
190	343P		
191	343P		
192	345P	110	border line 1
193	347P	110	border line 2

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110,21.0,16.0,0.0,1.0,16.0,0.0;                                    349P  194   110   border line 3
110,1.0,16.0,0.0,1.0,1.0,0.0;                                      351P  195   110   border line 4
110,19.0,1.0,0.0,19.0,3.0,0.0;                                     353P  196   110   title block line 1
110,19.0,3.0,0.0,21.0,3.0,0.0;                                     355P  197   110   title block line 2
212,5,17,1.746,0.09,1,1.5708,0.0,0.0,19.127,2.25,0.0,17HCALS TES   357P  198   212 F 0 text for title block
T NETWORK,11,1.098,0.09,1,1.5708,0.0,0.0,0,19.451,2.115,0.0,11HMIL 357P  199
-D-28000,8,0.738,0.09,1,1.5708,0.0,0.0,0,19.631,1.98,0.0,8HCLASS I 357P  200
I,17,1.755,0.09,1,1.5708,0.0,0.0,0,19.1225,1.845,0.0,17HREFERENCE  357P  201
DRAWING,9,0.936,0.09,1,1.5708,0.0,0.0,0,19.532,1.71,0.0,9HL-BRACKE 357P  202
T;                                                                 357P  203
110,4.0,3.85,0.0,4.0,5.8,0.0;                                      359P  204   110   detail line 1
110,4.0,6.2,0.0,4.0,6.5,0.0;                                       361P  205   110   detail line 2
404,4,107,3.0,3.0,0.93,3.0,10.0,79,12.0,3.0,0.65,12.0,10.0,31,129, 363P  206   404   drawing
227,263,159,161,163,165,167,169,269,281,287,299,217,              363P  207
219,301,221,223,225,317,319,315,345,347,349,351,353,355,357,      363P  208
359,361,0,3,309,311,313;                                          363P  209
110,0.0,0.0,0.0,0.0,1,0.0,0.0;                                     365P  210   110   dashed line for subfigure
308,0,4HDASH,1,365;                                                367P  211   308   subfigure definition of dashed line
304,0,367,0.2,1.0;                                                 369P  212   304 F 1 line font - repeating dashed subfigure
S      39G      3D    370P    212                                    T    1
```

Attachment K

N-entity Entity Listing and Count

NAME	TYP	FORM		COUNT
NULL ENTITY	0	0		196
CIRCULAR ARC	100	0		19
COMPOSITE CURVE	102	0		2
CONIC ARC	104	0		1
ELLIPSE	104	1		1
HYPERBOLA	104	2		1
PARABOLA	104	3		1
COORDINATE PAIRS	106	11		3
COORDINATE TRIPLES	106	12		1
CENTERLINE	106	20		1
CENTERLINE	106	21		1
SECTION (FORM 31)	106	31		1
SECTION (FORM 32)	106	32		1
SECTION (FORM 33)	106	33		1
SECTION (FORM 34)	106	34		1
SECTION (FORM 35)	106	35		1
SECTION (FORM 36)	106	36		1
SECTION (FORM 37)	106	37		1
SECTION (FORM 38)	106	38		1
WITNESS LINE	106	40		6
SIMPLE CLOSED AREA	106	63		4
PLANE (CLIPPING BOX)	108	0		8
PLANE (POSITIV)	108	1		1
LINE	110	0		74
PARAMETRIC SPLINE	112	0		13
PARAMETRIC SPLINE SURFACE	114	0		3
POINT	116	0		12
RULED SURFACE	118	0		3
RULED SURFACE (PARAMETRIC)	118	1		1
SURFACE OF REVOLUTION	120	0		1
TABULATED CYLINDER	122	0		1
TRANSFORMATION MATRIX	124	0		8
TRANSFORMATION MATRIX	124	1		1
RATIONAL B-SPLINE	126	0		7
RATIONAL B-SPLINE SURFACE	128	0		1
RAT B-SPLINE SURF (CIRC CYL)	128	2		1
RAT B-SPLINE SURF (CONE)	128	3		1
RAT B-SPLINE SURF (SPHERE)	128	4		1
RAT B-SPLINE SURF (TORUS)	128	5		1
RAT B-SPLINE SURF (QUADRIC)	128	9		1
OFFSET CURVE	130	0		1
OFFSET SURFACE	140	0		1
CURVE ON A PARAM. SURFACE	142	0		2
TRIMMED SURFACE	144	0		1
ANGULAR DIMENSION	202	0		1
DIAMETER DIMENSION	206	0		1
GENERAL LABEL	210	0		1
GENERAL NOTE	212	0		96
GENERAL NOTE (DUAL STACKS)	212	1		1
GENERAL NOTE (IMBEDDED FONT)	212	2		1
GENERAL NOTE (SUPERSCRIPT)	212	3		1
GENERAL NOTE (SUBSCRIPT)	212	4		1

NAME	TYP	FORM		COUNT
GENERAL NOTE (SUPER/SUBSCR.)	212	5		1
GENERAL NOTE (STACK;LEFT)	212	6		1
GENERAL NOTE (STACK;CENTER)	212	7		1
GENERAL NOTE (STACK;RIGHT)	212	8		1
GENERAL NOTE (SIMPLE FRACT.)	212	100		1
GENERAL NOTE (DUAL FRACTION)	212	101		1
GENERAL NOTE (IMBED.;FRACT.)	212	102		1
GENERAL NOTE (SUP/SUB;FRACT)	212	105		1
LEADER (WEDGE)	214	1		1
LEADER (TRIANGLE)	214	2		12
LEADER (FILLED TRIANGLE)	214	3		1
LEADER (NO ARROWHEAD)	214	4		4
LEADER (CIRCLE)	214	5		1
LEADER (FILLED CIRCLE)	214	6		1
LEADER (RECTANGLE)	214	7		1
LEADER (FILLED RECTANGLE)	214	8		1
LEADER (SLASH)	214	9		1
LEADER (INTEGRAL SIGN)	214	10		1
LEADER (OPEN TRIANLE)	214	11		1
LINEAR DIMENSION	216	0		2
ORDINATE DIMENSION	218	0		2
POINT DIMENSION	220	0		1
RADIUS DIMENSION (SINGLE)	222	0		1
GENERAL SYMBOL	228	0		1
GENERAL SYMBOL (DATUM FEA.)	228	1		1
GENERAL SYMBOL (DATUM TAR.)	228	2		1
GENERAL SYMBOL (FEA.CONTR.)	228	3		1
SECTIONED AREA	230	0		1
SUBFIGURE DEFINITION	308	0		1
DRAWING	404	0		1
NAME	406	15		3
DRAWING SIZE	406	16		1
DRAWING UNITS	406	17		1
SINGULAR SUBFIGURE INSTANCE	408	0		2
VIEW	410	0		2
	T O T A L			547

Attachment L

L-bracket Entity Listing and Count

L-BRACKET

NAME	TYP	FORM	COUNT
NULL ENTITY	0	0	35
CIRCULAR ARC	100	0	12
CENTERLINE	106	20	2
CENTERLINE	106	21	1
SECTION (FORM 31)	106	31	1
WITNESS LINE	106	40	6
PLANE (CLIPPING BOX)	108	0	16
LINE	110	0	58
PARAMETRIC SPLINE	112	0	1
TRANSFORMATION MATRIX	124	0	6
DIAMETER DIMENSION	206	0	1
GENERAL NOTE	212	0	6
LEADER (TRIANGLE)	214	2	8
LINEAR DIMENSION	216	0	3
RADIUS DIMENSION (SINGLE)	222	0	1
LINE FONT DEFINITION	304	1	1
LINE FONT DEFINITION	304	2	1
SUBFIGURE DEFINITION	308	0	2
COLOUR DEFINITION	314	0	1
VIEWS VISIBLE	402	3	2
VIEWS VISIBLE, COLOUR	402	4	1
ORDERED GROUP WITHOUT BACKP.	402	15	1
DRAWING	404	0	1
DEFINITION LEVEL	406	1	1
LEVEL FUNCTION	406	3	4
LINE WIDENING	406	5	1
NAME	406	15	5
DRAWING SIZE	406	16	1
DRAWING UNITS	406	17	1
SINGULAR SUBFIGURE INSTANCE	408	0	1
VIEW	410	0	4
T O T A L			185

Attachment M

IGES Test Platform: Hardware/Software Descriptions

1.0   Introduction

The CALS Test Network IGES Test Platform located at the Lawrence
Livermore National Laboratory is comprehensive.   The CTN IGES
analyst has access to mainframe and personal computer CAD
systems, IGES analyzers, MIL-STD-1840A analyzers, and more.   The
following paragraphs discuss the hardware and software utilized
on the CTN IGES Test Platform.

2.0   Hardware

2.1   MicroVAX Platform

The primary test hardware, running the analyzation software, is a
DEC Microvax II computer.   It operates VMS and is equipped with 8
MB of RAM memory, a 159 MB hard drive, and a VT320 console
terminal.   A Tektronix Model 4207 graphics terminal allows
graphic display.   A Purtek magnetic tape drive allows the
transfer of files to and from 9-track tapes at 800, 1600, 3200,
or 6250 bits per inch densities.

2.2   Personal Computer Platform

The personal computer platform, for running editors and PC-based
CAD systems, is a COMPAQ Deskpro 386 computer.   It operates DOS
at 16 MHz speed and is equipped with 4 MB of RAM, a 40 MB hard
disk, and a 80387-16 MHZ math co-processor.   The terminal is a
Wyse 700, 15 inch monochrome monitor with a 1200 x 800 resolution
graphics card.   The digitizer is a 12 x 12 inch IS/ONE tablet
manufactured by KURTA.   This computer utilizes a NEC Pinwriter P6
dot matrix printer and a Hewlett-Packard Laserjet Plus.

2.3   Plotter

Both the MicroVAX II and the COMPAQ Deskpro 386 drive a Houston
Instruments Model #DMP62 Plotter which is capable of plotting A-
through E-sized drawings.

2.4   Mainframe CAD System

The CTN IGES Testing Project has access to a Computervision CGOS
200 mainframe computer.   It is equipped with 9 color Instaview
work platforms with 1 MB of RAM allotted to each, 3 alpha-numeric
terminals, and 9 300 MB disk drives for data storage.

3.0   Software

3.1   MIL-STD-1840A Tape Reading/Analyzation and Writing

Tools

The CTN has developed software to read/analyze and write an 1840A standard 9-track tape. Both pieces of software run on the Microvax II computer of the CTN IGES Test Platform. The 1840A tape reading/analyzation tool mounts the tape; copies the files; and analyzes the 1840A tape formats, declaration files, and header fields. The writing tool prompts one to fill in the 1840A declaration and header field information, collects and merges the necessary files, and then copies them to a properly formatted 1840A standard tape. Both software packages are available to all CTN members.

3.2 Parser/Verify and View

The MicroVAX II supports the IGES Data Analysis Company Parser/Verify and View Software. The Parser/Verify programs read IGES formatted data files and generate reports on the IGES files' levels of compliance to the current standard. The programs themselves are easy to run and the output is useful and understandable, although most, but not all, of IGES errors are flagged. The View program allows users to directly view the graphic representation of an IGES file. Users can view an IGES file on the graphics terminal and/or reproduce it on a plotter. Here again, most, but not all, of the IGES entities are displayed for viewing.

3.3 IGES Model Testing System

The MicroVAX II also supports the IGES Model Testing Software (IMTES) Version 4.1 by R. Glatz. This software contains a very thorough IGES compliance analyzer and one of the few that checks for compliance to the MIL-D-28000 subsets. Also encompassed in this software is a program which compares a test pre-processed IGES file to a reference IGES file and reports differences in the resulting models. To debug any problems in an IGES file, the software package also provides a debugger.

3.4 PC CAD Programs

The personal computer runs CAD software. The two CAD packages currently operating on the system are AutoCAD Revision 10 by Autodesk and CADKEY Revision 3.02 by Micro Control Systems, Inc. These are used for experimental CAD designing and IGES processing.

3.5 Editors

The personal computer runs IGES EDITOR, a public domain program written by the National Institute for Standards and Technology to help edit IGES files and resequence start sections. Large editing of IGES files (like that undertaken to produce the CTN Reference Files) is accomplished using Microsoft Word V. 4.0 on the PC and/or EDT on the MicroVAX II.

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3.6 Mainframe CAD Program

The mainframe CAD system that the CALS Test Network utilizes operates the Computervision CADDS 4X Revision 5.00-E software package. It allows more powerful/complete modelling and processing of IGES files.

4.0 Conclusion

A complete IGES testing platform requires not only reliable hardware and software, but also competent analysts. The CALS Test Network IGES Test Platform at the Lawrence Livermore National Laboratory is doing its best to boast all three.